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No. XIX., OF VOL. II., 1937. LONDON, SATURDAY, NOVEMBER 6, 1937. Pp. 128—Price 1s.
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No. 5958 LONDON: SATURDAY, NOVEMBER 6, 1937 CCXXXIII

CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT

ADDRESSES AND ORIGINAL ARTICLES

Orthopædic Surgery — Retrospect and Forecast. By W. ROWLEY BRISTOW, F.R.C.S..... 1061
Chemotherapy of Streptococcal Infections. By A. SMITH, M.B. 1064
Heart-block in Coronary Thrombosis. By J. D. OLAV KERR, M.B.—(*Illus.*) 1066
Pentothal Sodium in Intravenous Anæsthesia. By F. B. MALLINSON, M.R.C.S. 1070

CLINICAL AND LABORATORY NOTES

Intestinal Obstruction. By J. R. WILSON, M.B.—(*Illus.*) 1073
After-shock in Insulin Treatment of Schizophrenia. By J. G. HAMILTON, M.D. 1074

MEDICAL SOCIETIES

Royal Society of Medicine: Sections of Medicine and Therapeutics: Sulphanilamide and Related Substances 1075
North-Western Tuberculosis Society: Radiology at a Tuberculosis Clinic 1077
Hunterian Society: General Practitioner in Midwifery 1078

REVIEWS AND NOTICES OF BOOKS

Lumley's Public Health. By Sir Joshua Scholefield, K.C., and others 1080
Verzögerte Knochenbruchheilung und Pseudarthrosenbildung. By Prof. Dr. G. Brandt ... 1080
Synopsis of Obstetrics and Gynæcology. By A. W. Bourne, F.R.C.S. 1081
Failure of the Heart and Circulation. By T. East, F.R.C.P. 1081
Scientific Basis of Physical Education. By F. W. W. Griffin, M.D. 1081
A Surgeon's Pocket Book. By H. S. Souttar, F.R.C.S. 1082
Pathology of High Altitude Climate. By A. Loewy and E. Wittkower, M.D. 1082
Microtomist's Vademecum. By A. B. Lee. Edited by Prof. J. B. Gatenby, M.A., and Prof. T. S. Painter, Ph.D. 1082

LEADING ARTICLES

THE CAUSE OF EPIDEMIC DROPSY 1083
SANS PEUR ET SANS REPROCHE 1083
FRACTURES IN THE ANTERIOR FOSSA..... 1084

ANNOTATIONS

Abyssinian Refugees in Kenya 1085
A New Remedy for Kala-azar 1085
Health under the "El" ... 1085
Mechanical Resuscitation of the New-born 1086
Care of the Blind 1086
Index Medicus 1087
Syphilis, Yaws, and Bejel 1087
Surgical Treatment of Pick's Syndrome 1087
The Basque Children 1088
Acute Epidemic Hepatitis 1088
Sören Holth 1088
Health-Mindedness 1088
Malaria in England in the Seventeenth Century .. 1089
Galvani of Bologna 1089
Statistics of London Voluntary Hospitals 1089
An Objective Test of Malnutrition? 1090
Undulant Fever in Childhood 1090
The Nobel Prizeman 1090

GRAINS AND SCRUPLES

From A Salaried Surgeon (I) 1100

THE SERVICES

Royal Naval Medical Service—Army Medical Services—Royal Army Medical Corps—Royal Air Force—Indian Medical Service 1102

SPECIAL ARTICLES

Four Thousand Basque Children. By R. G. GIBSON, M.R.C.S. —(*Illus.*) 1091
Developments at Oxford: Report of the Nuffield Committee 1096
United States of America: Poverty and Ill Health—Control of Pneumonia and Syphilis — Deaths from Elixir of Sulphanilamide 1097
Scotland: Dehydration and Œdema—The Pupil Reactions 1098
Ireland: Pensions of Army Medical Officers.. 1099
Medicine and the Law: A Curiosity of Dental Benefit 1099
International Society of Medical Hydrology ... 1101

THE LANCET 100 Years Ago 1102

CORRESPONDENCE

Assessment of Psychiatric Treatment (Dr. Mary C. Luff) 1103
The Arches of the Feet (Mr. Norman C. Lake, F.R.C.S.) 1103
Aplastic and Achrestic Anæmias (Dr. J. F. Wilkinson and Dr. M. C. G. Israëls, and Dr. A. K. Gordon) 1104
Chrysotherapy (Dr. G. Slot, Dr. W. Crowe) ... 1105
"My Post-bag" 1106
Ketonæmia in Infancy (Dr. G. Graham) 1107
The Meaning of "Examined" (Dr. L. B. C. Trotter) 1107

PUBLIC HEALTH

The Dysentery Outbreak at Luton 1107
Infectious Disease in England and Wales ... 1107

OBITUARY

Frederick William Burton-Fanning, F.R.C.P. (*With portrait*) 1108
Majorie Blandy, M.R.C.P. 1108
Claude Wilson, F.R.C.P... 1109

PARLIAMENT

Debate on the Address—New Bills 1109
Question Time: Unemployment Assistance—Non-inflammable Films—Magistrates and Factory Acts Decisions—Housing Subsidies—Birching of Boys—Medical Aid for China.. 1111

MEDICAL NEWS

University of Cambridge 1112
University of London 1112
Society of Apothecaries of London 1112
Royal College of Physicians of London 1112
Scottish Conjoint Board . 1112
University of Edinburgh 1113
University of Aberdeen .. 1113
Roy. Faculty of Phys. and Surg. of Glasgow 1113
Nat. Univ. of Ireland 1113
British Coll. of Obstet. and Gynæc. 1113
British Inst. of Philosophy 1113
International Soc. of Surg. 1113
Rheumatism in Relation to Death and Disablement 1113
Lectures on Tropical Hygiene 1114
Green Cross Society 1114
London School of Hygiene and Tropical Medicine 1114
Fellowship of Medicine .. 1114
Leprosy in Great Britain To-day 1114
Midland Mental Pathological Society..... 1077
Society of Physiotherapists 1079

NOTES, COMMENTS, AND ABSTRACTS

The Reynolds Portrait of John Hunter 1117
Public Health Research in Calcutta 1117
Relation of Posture to Health 1117
An Adventurous Practitioner 1118
Consciousness and the Anæsthetist 1118
The Memoir of a Conciliator 1118
Sex Instruction for Girls 1118

Appointments 1115
Vacancies 1115
Medical Diary 1115
Births, Marriages, Deaths 1116

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ORTHOPÆDIC SURGERY—RETROSPECT AND FORECAST *

By W. Rowley Bristow, F.R.C.S. Eng.
ORTHOPÆDIC SURGEON TO ST. THOMAS'S HOSPITAL

I propose to consider one of the great changes that have taken place in the whole trend and outlook of surgery during the last twenty-five years, with the object of examining the present position and perhaps forecasting or at least indicating the lines of activity along which our specialty is likely to advance in the future, fitting into the general scheme of surgery as a whole.

The greatest change that has taken place in surgery during this period is without question the rise of specialism. This seems to me a natural and necessary stage in evolution. No single mind is big enough to cope with the mass of knowledge which is now available. The growth of science and the application to medicine of such natural sciences as biochemistry, to name only one, render it impossible. Only if he voluntarily relinquishes a great part of surgery can a surgeon hope to master any department of it. There is a considerable divergence of opinion whether specialism is good or bad. Arguments may be used on both sides, and many men deplore the rapid growth of specialism in this country. We orthopædic surgeons believe that the change is good; but good or bad, the change has come, and we must do our best to guide our own specialty wisely, both for its own sake and for the sake of surgery as a whole, ever bearing in mind two fundamental problems: (1) the treatment of the patient, and (2) the training of the future generation of doctors.

It is generally agreed that specialism, and this entails segregation, benefits the patient. It is the close interrelationship of the two sides of the problem which needs careful consideration. If we could concentrate only on the treatment of the patient and forget the need of training men to carry on the work, both the student and the post-graduate, our task would be easy.

Undergraduate Teaching

It is when we come to consider the effect which the increase of specialism has on medical education that we come up against a difficulty. In the London medical schools we have a system of clinical training, which has worked well over the years, characterised by intimate contact of the student and the patient at the bedside. As medical clerks or surgical dressers, we are attached for some six months or in some schools nine months to a physician or surgeon. He is the master—the dresser the apprentice. This system is hallowed by tradition and dates back to the time when there were no special departments and no specialists.

The special departments have grown up; the material they deal with no longer finds its way into the general wards; the master, call him what you will, no longer practises all surgery but only a part. And yet the apprentice system remains and for six months the student will follow his teacher in his wards and in his theatre. The master may well be a specialist on the upper abdomen, the genito-urinary system, or in the surgery of the thyroid, and the patients for whom he caters will occupy his beds. He will long ago have ceased to be interested, if indeed he ever were, in the treatment of common injuries, of cut tendons, of fractures, of deformity. He will rarely have such patients referred to him in private practice, and his interest, if he claims an interest, in these problems will be one of lip service only. This contention cannot, I think, be gainsaid by any fair-minded critic of the present system.

In the older hospitals it is a difficult and I shall be told a dangerous thing to tamper with tradition. There can be no reform without some sacrifice—some give and take—and some interference with vested interests. I submit that the student's curriculum, which is already so long that it cannot be added to, must be somewhat modified: that he must learn the principles of surgery and the rudiments of practice by three months spent in a general unit, where he is taught surgery as a whole—inflammation, the examination of the patient in bed, note-taking, and elementary theatre technique; and that then he must leave his first master and serve a series of masters. He must attend an orthopædic department which includes a fracture service, and equally a genito-urinary department (and its complement the department for venereal disease), the throat department, and so forth for his further period of three or six months as a dresser. He can then see surgery as a whole, and when his major appointments as a dresser are finished and he is preparing for his finals he will have a better basis, a wider knowledge of what is going on in his hospital, of what surgery means. Complicated as this scheme sounds, and this is not the moment to consider it in detail, I do not think the difficulties are insurmountable. Time-tables could be arranged in the dean's office, and in the time at the student's disposal—admittedly short—he could get the work done. I see no other way. Surgery is decentralised both inside and outside the hospital, and the student must, if one may coin the phrase, be decentralised too.

I can foresee all sorts of objections and arguments; any new scheme, unhallowed by tradition, can be criticised destructively. What the student loses by this change will be more than compensated for by what he gains. Many of the teaching hospitals are considering how best to handle the fracture problem, and the main difficulty raised against segregation, which we all agree is in the best interests of the patient, is the fear that the student will lose his opportunity of close contact with the patient, of seeing and handling fractures, and will lose also the teaching which he is said to receive during his period of dressing. But is there really much to lose? A statistical study of the intake of fractures in a large teaching hospital shows how few there really are. Spread out amongst four or five surgical firms they become still fewer. Segregated and taught upon systematically they would be of value, and a dresser would of necessity meet with most of the common ones during his appointment. In my judgment he has all to gain and very little to lose by some such change as I suggest, and I firmly believe that the change must come.

In this brief review it is not possible to consider the teaching of the student at greater length, but it is obvious that the great wealth of clinical material

* The presidential address delivered on Oct. 29th at Sheffield to the thirty-seventh meeting of the British Orthopædic Association.

handled in the municipal hospitals is not being utilised for this purpose at the present time. Some way must be found to link this great service more closely with the teaching hospitals.

Evolution of Modern Orthopædic Surgery

The growth of modern orthopædic surgery may be said to date from the great war. In pre-war days few men practised the specialty. Robert Jones, well known and recognised though he was both on the Continent and in America, had not yet been accorded his rightful position in this country. St. Bartholomew's Hospital had a department, and Guy's were starting one about 1912 or 1913, if my memory serves, but there was no general recognition of the specialty or its needs in the London teaching hospitals. There were and had always been men interested in bone and joint work, like H. H. Clutton at my own hospital, T. H. Openshaw at the London, and A. H. Tubby at the Westminster, to name only three; but it is fair to say that London had not awakened to the need of orthopædic departments as we understand them to-day. The orthopædic surgeon who was not also a general surgeon worked in a separate and special hospital, unconnected with any teaching school, and his scope was very limited in comparison with that of his modern successor. His time and attention was given largely to the fitting of braces and appliances, the treatment of feet, and the correction of congenital and paralytic deformities. And what was true of London was true of the country as a whole, with the brilliant exception of Liverpool, which Jones had made the home of orthopædic surgery.

With the war came the opportunity, and the man was there trained and ready and endowed with just those very attributes which made the change possible. He understood, no one better, that "the art of persuasion is the only true intellectual process." Overcoming all opposition, and there was opposition, he built up the special hospitals where many of us were privileged to work and learn from him. In the preface to the Robert Jones Birthday volume, Moynihan pays eloquent testimony both to the man, himself and to the work he accomplished. The story is well told in his Life written by Frederick Watson who traces the story through from the early days in Liverpool, tells how the difficulties were overcome, and how by patience and tact, and singleness of purpose, and unswerving devotion to an ideal which neither delay nor obstruction could impair, he succeeded in building up the great organisation of the military orthopædic hospitals.

The British Orthopædic Association was formed in November, 1917, twenty years ago, at a dinner given by Muirhead Little, Robert Jones, and T. H. Openshaw, at the Café Royal in London, and held its first meeting under Little's presidency at Roehampton House in February, 1918. This was largely at the instigation of Robert Osgood, who was over here on war service and, appreciating the value of the American Association, he helped largely in the formation of our own which was based on the American model. Since then, as you know, we have met twice yearly, in the winter at a university centre in the British Isles and in the spring either at a country hospital or at a foreign clinic.

The Present Position of Orthopædics

In the years following the war orthopædic surgery reached its zenith. Its scope had enlarged, a sufficient number of surgeons had been attracted and trained, so that the setting up of new orthopædic departments was possible. One of the most striking developments has been the decentralisation resulting from the formation of after-care schemes, based on the Shropshire model, and orthopædic hospitals opened up in various parts of the country. The virtue of this decentralisation, the accessibility of the local centres for the patients, and the ease of after-care are evident. The local orthopædic schemes run in connexion with small non-teaching hospitals are of the greatest importance and can accomplish a vast amount of useful work. There is one drawback. The material is lost for the education of the student. In the majority of conditions this is of no moment, but for rare or comparatively rare clinical material—e.g., bone tumours or congenital dislocation of the hip—which is required both for teaching and research, I would ask that in the future the segregation of such cases to certain big centres might be considered. A bone sarcoma, interesting though it may be, is of no real value to a surgeon unless a number are being collected and studied. To undertake the treatment of one or two congenital dislocations of the hip a year will not get one far. Think of Bologna where I am told 500 new cases are handled in a single year. I would ask a surgeon placed in charge of a small non-teaching area to be prepared to hand over to the big teaching centre such rare material which, though of interest to him, is of so much greater value when it can be studied in bulk by a team of scientists, as the bone tumour must be. Working on these lines we could imitate our American colleagues and initiate a bone sarcoma registry, and through intensive study by a well-equipped team, with an adequate supply of material, we could help to advance medical knowledge.

Orthopædics in Other Countries

It is interesting to consider what is happening on the Continent.

In *Italy* is seen perhaps the logical development of the orthopædic specialty, as we believe it will develop in this country. Prof. Putti at Bologna is now professor of orthopædic surgery and traumatology, and it is of interest that the International Association of Orthopædic Surgeons has added Traumatology to its title.

When we turn to *Germany*, the position is different. I have read a memorandum, composed by the German Association of Surgeons in 1932, in which an attempt has been made to stop all development and limit the scope of the work of the orthopædic surgeon. This we believe to be a retrograde step. The teutonic point of view is to some extent accepted in *Austria*, where the chair of orthopædic surgery in Vienna, which Lorenz held and made world famous, is now absorbed as a sub-department of the chair of surgery.

In *France*, as you know, orthopædics was linked up with the surgery of children, and Prof. Ombrèdanne holds the chair at the Hospital for Sick Children in Paris. But the old idea is overthrown by the addition of a second chair, and Prof. Mathieu now holds a chair of orthopædic surgery and deals with adults.

On our recent visit to *Scandinavia* we saw new and wonderfully equipped hospitals. The work of the orthopædic surgeon there is not unlike our own. Great stress is laid on training and rehabilitation, the social side of the problem, which goes on hand in hand with the surgical work and in the same institution, rather like it does in some of our own country hospitals, noticeably at Alton, Oswestry, and at the Wingfield-Morris.

In *America*, orthopædics as a specialty was well established before the war. Our own Association, as has been said already, owes much to our American colleagues in that Osgood was one of the prime movers in its formation. In America, speaking generally, fractures are segregated, and the orthopædic surgeon plays a large part in their treatment.

Training of the Orthopædic Surgeon

Only a word is needed on the training of orthopædic surgeons. But if we lay claim to the wide field which we do claim, we must see to it that men are trained in the specialty and do not just attach a label, after an all too short apprenticeship, and with an insecure foundation. We would say that a man must be up to the F.R.C.S. standard, and pass on from house surgeon to registrar or some similar senior post on a general surgical unit. He must be trained in surgery as a whole, its principles and its practice, before he can profitably branch off to the specialty of his choice—be it abdominal surgery under what name you choose, urology, or orthopædic surgery.

If he elects to be an orthopædic surgeon he must work in a well-equipped teaching unit, covering the whole field. Some years of work are needed, and I think four years is the minimum. He will find the need of special knowledge and he will appreciate that he has much to learn. He must become expert in radiological diagnosis, for the orthopædic surgeon must himself interpret radiographic evidence in the light of his continuous clinical experience and his observations on the pathology of the living. The complete centralisation of radiological services which is characteristic of the hospitals of this country is an obstacle to progress. X ray apparatus has become an instrument of precision which the orthopædic surgeon needs more and more in his operating theatre and in his wards. He needs a technician to be at his disposal at any time, as part of his own team. The collaboration of the expert radiologist in consultation is at times invaluable and indeed essential, more particularly if the radiologist is prepared to give time to the elucidation of the problems which the orthopædic surgeon propounds. Those of us who saw the work turned out by the radiological department in Waldenström's clinic in Stockholm could not but realise the perfection of the technique which can be achieved, to the great advantage of the surgeon. The radiograms of the fifth lumbar vertebra and its articulations were an eye opener to most of us. Radiological diagnosis would seem to require decentralisation with separate units attached to special departments of surgery and certainly to our department. X ray therapy on the other hand demands centralisation.

Our ex-registrar, too, will appreciate the need to gain some knowledge of physiotherapy. As an orthopædic surgeon he must himself prescribe the details of physical treatment for his patients. Speaking for myself, I have found that the time I spent in this branch of the work has been of the very greatest help to me not only in appreciating what can be done but also in deciding on the limitations of physical treatment; I would instance the value of active movements, whether in the handling of fractures or in the post-operative stage of many orthopædic ailments, and the uses of faradism to build up muscle and to stimulate into activity many small muscles, such as the intrinsics of the foot. The uses of physiotherapy in the handling of minor injuries of the locomotor system, sprains, and the like will be found a very real help in practice.

In the training of the orthopædic surgeon I would emphasise the need of impressing upon him the great attention to detail required in these and similar matters, and remind the hospital resident that minor ailments cease to be minor when he leaves the hospital, goes out into practice, and meets the patient with the sprained ankle for the first time. Some training in clinical neurology is also desirable, for many of the obscure, progressive diseases of the central nervous system present themselves in the orthopædic out-patient clinics. Unless their true condition is recognised these patients will not be passed on to the neurological department as they should be.

Military Orthopædics

A rumour has reached me that under the reorganisation scheme of the Territorial Army Medical Service each command is to establish new military general hospitals, some for service overseas and some for home service. These hospitals are to act as skeleton models for any great national emergency. I understand that under this scheme there is no special provision for the organisation of military orthopædics. Only last month the memorial to Robert Jones was unveiled in Liverpool Cathedral. Can it be that already his achievements are forgotten by the War Office? I can only hope and believe we are misinformed.

The Future of Orthopædic Surgery

In organised orthopædics, there will be a steady advance in the extension and perfection of coördinated schemes for the prevention and control of crippling disorders. It may be said that the problem of the treatment of the crippled child is largely solved, or at least well in hand, and that there are sufficient beds available, although there is need of some geographical redistribution, whilst beds are still needed for the adult cripple. In the past, orthopædic surgeons have been called upon to play a leading part in the actual details of organisation and administration of what may be called the social aspect of orthopædics. The vision of the future generation must be deflected somewhat to the attainment of a second objective—viz., the furtherance of investigation and active research into the basic problems which form the background of orthopædics—problems in the applied anatomy, physiology, and pathology of the locomotor system. This can only come about when orthopædic surgery is accorded its rightful academic status in the medical schools and universities, and when research is generously endowed. We must use our enthusiasm and our powers of persuasion to bring about this ideal state of affairs. Arising out of this train of thought, I would like to see a bigger representation of orthopædic surgeons on the various examining boards. If we lay claim to the position we must be prepared to pay the price, and do our full share of committee work, teaching, and examining as opportunity offers.

The fracture problem looms large at the moment, and the findings of the B.M.A. committee are receiving attention. Their report has stirred up both the medical profession, local authorities, and outside bodies such as the employers of labour through their organisation, the Industrial Welfare Association. I find myself in agreement with H. A. T. Fairbank, who wrote recently[1]: "It seems more than likely, that eventually all fracture clinics will be under the

[1] *Post-grad. med. J.* October.

care of the orthopædic surgeon of the hospital." Let us be careful then in our selection and training of men who are going to call themselves orthopædic surgeons. They must have served an apprenticeship in a department and under men who are handling fractures.

The solution of the fracture problem does not present any real difficulty. Those of us who worked in the military orthopædic hospitals must feel that all we have to do is to put back the clock twenty years, and recapture the organisation we had at that time, in order to carry out the scheme for the better handling of fractures: segregation, continuity of treatment, after-care, unity of control, and one may add to the committee's findings—rehabilitation. The scheme was carried out and was working. Robert Jones had handled the problem and solved it twenty years before it presented itself to industry and to the profession at large. That no single one of all those centres he created remains, as a model of what should be done in traumatic surgery, is a sad thought. But many of the surgeons who worked in them remain, and with goodwill the effort can be repeated, as local arrangements best permit, either in the form of separate institutions, as Böhler's clinic in Vienna, or as part of a general hospital.

CHEMOTHERAPY OF STREPTOCOCCAL INFECTIONS

PARTICULARLY STREPTOCOCCAL TONSILLITIS

By Alexander Smith, M.B. Glasg.

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At the County Orthopædic Hospital, Lanarkshire, I have had the opportunity of treating with sulphanilamide and similar preparations 2 cases of hæmolytic streptococcal arthritis of the hip-joint, 39 cases of streptococcal tonsillitis among patients and staff, and 6 cases of streptococcal cervical adenitis and cellulitis in patients who had had tonsillitis outside. Much has appeared in recent months on the chemotherapy of the severer forms of streptococcal infection, so perhaps our experience of what these remedies can do for patients less gravely ill may be of interest.

Streptococcal Arthritis of the Hip-joint

My own initial experience of the value of Prontosil Soluble and Prontosil Album (*p*-aminophenylsulphonamide) was in two cases of acute septic arthritis of the hip-joint, who each gave a history of sore-throat followed later by a severe illness with high temperature, sweating, and hip-joint pain. They were both gravely ill, and from the hip-joints of both, pus containing the hæmolytic streptococcus was aspirated, and thereafter the joints were drained surgically. The first patient received daily for three days 20 c.cm. of 2½ per cent. solution of prontosil soluble, the sulphanilamide for oral administration not then being available. The second patient in addition to this received 1·8 g. prontosil album by mouth daily. They both made good recoveries with complete restoration of joint function. I feel sure now that their recovery would have been hastened had I known that a much larger dose could have been safely administered. I was therefore determined that, should the opportunity arise, I would test the method in larger doses on any streptococcal infections that came my way.

Streptococcal Tonsillitis

During the past six months an epidemic occurred among patients and staff resulting in 45 cases of streptococcal tonsillitis, 39 of whom were treated with sulphanilamide. Since these were resident in hospital all were under constant observation, and could have complete bacteriological and clinical supervision.

They varied in age from 1 year to 45 years. In 22 cases *p*-aminophenylsulphonamide (prontosil album) was used, and in four of these 22 prontosil soluble was given intramuscularly as well; while the remaining 17 cases were treated by *p*-benzylaminobenzenesulphonamide (Proseptasine). In all instances frequent and repeated cultures were made, and out of the total of 39 patients, 31 were infected by the hæmolytic streptococcus and 8 by the *Streptococcus viridans*.

Clinically in nearly all cases the illness was an acute one with prostration and considerable pyrexia, usually over 101° F. and sometimes as high as 103° F. and 104° F. In the hæmolytic infections the fauces were very red and injected, the tonsils covered with exudate or pus, and the lingual papillæ prominent. The patients with viridans infections were on the whole less acutely ill.

DOSAGE

It was soon recognised after a few early trials that even in streptococcal tonsillitis small doses of 1·8 or 2·4 gramme per day (2 tablets prontosil album three or four times daily) were of little avail in the acute stages, and massive dosage was employed until the infection had been overcome.

Our practice was to give doses of prontosil album varying from 0·6 g. in a child under one year to 7·2 g. in an adult. With proseptasine the dose was sometimes greater, and in a few instances 12·5 g. of this were given in 24 hours. As soon as the acute stage had passed, however, and the temperature had become normal, usually at the end of 24 hours and seldom later than 36 hours, the dose was reduced by half. This was continued for two or three days and again reduced until for the last two days only about 1·2 g. daily were administered in an adult. The average adult patient received, therefore, in all about 16 g. to 18 g. of prontosil album. This, of course, varied with the severity and course of the disease, and in a few instances considerably higher amounts were given. It was found convenient where the massive doses were given to administer two tablets every two hours while the patient was awake.

These doses seem to be higher than those employed by Peters and Havard (1937) in the treatment of scarlet fever. Foulis and Barr (1937) in their treatment of puerperal sepsis gave 7·2 g. in 24 hours for the average patient, but, of course, the total amount of product administered to each patient by them was greater since treatment was of necessity much longer. As far as clinical experience went, there was no appreciable difference in therapeutic efficiency between prontosil album and proseptasine.

RESULTS

Hæmolytic streptococcal cases.—In 31 patients receiving sulphonamide this organism was isolated.

The first 5 patients treated received inadequate doses and the response was disappointing, the acute stage of their illness lasting more than 48 hours. The other 26 were treated on the massive dose system, and in them the response was satisfactory, 19 having normal temperatures within 24 hours, and the rest within 36 hours. Pain in the throat and general discomfort soon disappeared and most of them declared themselves recovered.

It was noticed in some patients who had been sharply ill that the pulse-rate did not return to normal as rapidly as the temperature, and that although they

had little complaint, they looked shaken and exhausted. Did this indicate that, though there had been rapid destruction of the organism from increase in the hæmobactericidal power (Colebrook, Buttle, and O'Meara 1936), considerable toxæmia remained?

It was in consequence decided to try the combined administration of the drug and antistreptococcal serum in the severest cases, and 7 patients each received 6000 units. It seemed that this might have been of advantage, and in the severe streptococcal septicæmic conditions should be considered worthy of trial. Brannam and Rosenthal (1937) have recently reported that the combined use of the sulphanilamide and serum was more effective than either alone in pneumococcal and meningococcal infections in mice.

It is significant that in no case were there any new complications. One child who already had an old otitis media had some renewed discharge from his ear, but this subsided in a few days, and the ear remains dry. Acute cervical adenitis and cellulitis were not encountered, even although many of the patients previously had had tuberculous cervical adenitis. Among the children affected in the surrounding countryside who were not treated with the sulphonamides ear complications were not unknown, and quinsies, and cervical adenitis and cellulitis were apparently fairly common. Of the cervical adenitis and cellulitis cases 6 were admitted to hospital later for treatment. Also 6 members of the staff with hæmolytic streptococcal throats who did not have sulphonamide had a much longer illness, with some degree of pyrexia up till the fifth day. Their convalescence was more protracted, lasting usually into the third week. One of them developed a quinsy. It must be remembered, however, that the patients and staff who actually developed the disease in hospital were in an extremely favourable position to receive prompt and adequate treatment in the invasive stage.

Streptococcus viridans cases.—The 8 patients from whom the *Streptococcus viridans* was isolated suffered from an infection of a less overwhelming intensity; their temperature was less high, and prostration was much less severe. In spite of this, however, the sulphanilamide did not have the same dramatic efficacy, as I have reason to regret, having been one of this group myself. Although the same dosage was administered the patient took longer to recover, and the temperature was not completely normal again till the third or fourth day, tending to show a slight afternoon rise.

Cervical adenitis and cellulitis.—Six children were admitted to hospital with cervical swellings and a history of sore-throat 10–14 days previously. They all had glandular swellings and surrounding cellulitis. One, a child of six, who received 9 g. prontosil album in four days, was ready for discharge at the end of a week, the whole infection having subsided without surgical intervention. In the other five cases pus had already formed and drainage was necessary, but they were well by the end of ten days. These patients were all infected by the hæmolytic streptococcus, which was isolated from their throats and also (in the five who required operation) from the discharge.

RELAPSES

In 5 patients with hæmolytic streptococcal tonsillitis relapses occurred at periods ranging from two to four weeks after complete recovery from the primary attack. The second attack was milder and readily responded again to the drug. It would seem well to remember that treatment should not be suspended too soon. The general systemic effects are soon controlled by the drug, but the local lesion is not influenced to the same extent. We had repeated cultures made from the throats, and the streptococcus in many instances could be isolated two, three, and four weeks after the complete recovery of the patients, who apparently remained infective, for contacts developed the disease. In fact it almost seemed that energetic treatment, though favouring the individual patient, increased the carrier rate.

PROPHYLAXIS

In consequence of this one or other of the sulphonamides was given as a prophylactic to 30 patients in doses varying from 0·6 g. to 3 g. daily for a few days. This, of course, could not be continued indefinitely, and clinical cases continued to arise at intervals. One patient actually developed the attack while having small prophylactic doses, but soon recovered after this amount was increased. In a widespread epidemic condition like streptococcal tonsillitis protection cannot be gained by this type of prophylaxis. This is what would be expected when it is remembered that the drug is rapidly eliminated. Apparently any increase in hæmobactericidal power must be very temporary, and so continuous and prolonged administration would be necessary. Where the danger period is of limited duration as in puerperal sepsis the matter may be perhaps quite different.

TOXICITY

Although, as far as therapeutic efficiency goes, it was not possible to differentiate between prontosil album and proseptasine clinically, the latter appeared to be less toxic.

Nausea and slight sickness were met with in 3 patients after large doses, and another complained of nausea without vomiting; administration was then stopped. There was no alarming experience of sulphæmoglobinæmia. Slight cyanosis was seen in 3 patients, but they made no complaint, declaring they felt well; the dose was reduced. A child of eight displayed some choreiform twitchings, but these were very temporary.

These effects followed the administration of prontosil album, and were not seen after proseptasine. Many of the patients suffered from tuberculous lesions of bones and joints, but the lesions were not adversely affected.

SUMMARY

1. *p*-aminophenylsulphonamide and *p*-benzylaminobenzenesuphonamide were equally valuable in the treatment of streptococcal tonsillitis, but the latter was somewhat less toxic.

2. Larger doses than those usually advised were found advantageous.

3. The combined administration of sulphanilamide and serum was found useful.

4. The sulphonamides had no prophylactic value in checking the spread of tonsillitis under epidemic conditions.

5. Infection by the hæmolytic streptococcus was more amenable to treatment by the sulphonamides than infection by the *Streptococcus viridans*.

My thanks are due to Dr. Gow Brown for the bacteriological work.

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HEART-BLOCK IN CORONARY THROMBOSIS

By J. D. Olav Kerr, M.B. Glasg.

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Cardiac infarction from coronary thrombosis may be accompanied by heart-block of various degrees, ranging from a prolonged auriculo-ventricular (P–R) interval, to complete dissociation. Adams-Stokes attacks occasionally accompany the block. The heart-block may be transient, disappearing completely as the patient recovers from the attack of pain, or it may persist indefinitely.

REVIEW OF PREVIOUS OBSERVATIONS

Hammer (1878) described the first example diagnosed during life. The patient, who was known to have had a normal pulse-rate previously, showed signs of severe collapse. His pulse-rate, at first 40, fell to 23, 16, and finally to 8 beats per minute before death, which occurred two days after the onset of the illness. A necropsy confirmed the diagnosis of coronary thrombosis. Oppenheimer and Oppenheimer (1914) reported heart-block with recurrent Adams-Stokes attacks. Coronary thrombosis with rupture of the heart, but without demonstrable lesion of the auriculo-ventricular bundle was found at necropsy. They remarked that although there was no break found in the conducting system on macroscopical and microscopical examination there was "such a disturbed circulation and abnormal condition in the neighbourhood of the conducting apparatus as might profoundly influence its functional capacity." Two cases have been described by Gallavardin (1922). One showed complete heart-block with Adams-Stokes attacks and died on the 15th day of the illness. The other had bradycardia with one Adams-Stokes seizure and eventually recovered. Among 19 cases of coronary thrombosis, confirmed later by necropsy, Wearn (1923) found 2 with electrocardiographic proof of complete heart-block, one of which was associated with bouts of ventricular tachycardia. Willius (1926) described 2 fatal examples of coronary thrombosis with pulse-rates of 30, and Adams-Stokes seizures. In one, a necropsy was obtained, and the infarction was found to involve the inter-ventricular septum.

In his series of 62 cases of coronary thrombosis, White (1926) found 2 with partial and 3 with complete heart-block. Parkinson and Bedford (1928) in their series of 100 clinical cases of coronary thrombosis included one with partial and one with complete heart-block. In his monograph, recording 145 cases of coronary thrombosis, Levine (1929) gave details of 9 cases with partial and 2 with complete heart-block. Conner and Holt (1930) in an analysis of electrocardiograms from 151 patients with coronary thrombosis reported dropped-beats, 2 : 1 block, or complete heart-block in 7 patients. Ball (1932) reported a patient who was shown to have complete heart-block two days after the onset of coronary thrombosis, 2 : 1 auriculo-ventricular block on the seventh day, a prolonged P–R interval on the 9th day, and finally a normal P–R interval on the 10th day of the illness. He gave a table of 16 cases from the literature. Arrilaga and Taquini (1934) reported 3 cases of myocardial infarction showing, on the electrocardiogram, transient complete heart-block. Describing 33 cases of coronary thrombosis, Stockmann (1934) included one with a prolonged P–R interval, two with 2 : 1 auriculo-ventricular block, and one with complete heart-block. In all four, the electrocardiogram showed signs of coronary thrombosis of the T_2 type. In their book, Cowan and Ritchie (1935) mentioned the occurrence of heart-block in 4 of 100 cases of coronary thrombosis. Jervell (1935) quoted many published references on this subject. In his own series of 69 cases of coronary thrombosis, the electrocardiogram showed prolongation of the P–R interval on three occasions, partial heart-block once, and complete heart-block twice.

Examining the electrocardiograms of 37 cases of recent coronary thrombosis confirmed by autopsy, Oille and Rykert (1935) found 6 with block: prolonged P–R interval in 5, and partial heart-block in one. Salcedo-Salgar and White (1935) in a series of 328 cases of coronary thrombosis saw 2 showing transient heart-block, 8 with partial, and 4 with complete heart-block. Saphir, Priest, Hamburger, and Katz (1935) among 34 cases confirmed by necropsy found 2 with slight heart-block (prolonged P–R interval). Similarly, Sprague, and Orgain (1935) found evidence of heart-block in 7 out of 61 cases. Analysing electrocardiograms from 72 examples of complete auriculo-ventricular dissociation, Graybiel and White (1936) found that coronary disease was associated in 47 instances, and that coronary thrombosis had given rise to the simultaneous onset of urgent cardiac symptoms and complete heart-block in 6 patients.

Schwartz (1936) discussed 15 patients with Adams-Stokes attacks following coronary thrombosis in a series of 45 cases of Adams-Stokes syndrome. In his monograph on myocardial infarction, Hochrein (1937) stated that in 297 cases, 3 showed partial and 2 complete heart-block.

Others who have described the occurrence of heart-block in coronary thrombosis are: Neuhof (1923), Taterka (1926), Elliot (1927), Frothingham (1927), Sigler (1928), Bell and Pardee (1930), Smith (1930), Sanders (1931), Hansen (1931), Hahn (1932), Boros and Fernbach (1933), Jorge (1933), Wilson and others (1933), Addey (1934), Bjerlöv (1934), Chvála (1934), Scherf and Siedek (1934), Serf (1935), Saltzman (1936), and Palmer (1937).

A Table is given for reference, showing the incidence of heart-block in coronary thrombosis according to certain published series. The variations in this incidence can be partly explained by the varied criteria used for the selection of cases by different writers. The percentage-incidence of heart-block in coronary thrombosis was 7·7 in the ten references where partial and complete heart-block were differentiated. In the whole of the series quoted, the average incidence of heart-block in coronary thrombosis, reckoned from 1436 cases of coronary thrombosis, proved to be 7·4 per cent.

Table showing the Incidence of Heart-block in Coronary Thrombosis Drawn from Published Series

Author and date.	No. of cases.	Partial heart-block.	Complete heart-block.	Total.
		No. %	No. %	No. %
Wearn (1923)	19	0	2 (10·5)	2 (10·5)
White (1926)	62	2 (3·2)	3 (4·8)	5 (8·1)
Parkinson and Bedford (1928)	100	1 (1·0)	1 (1·0)	2 (2·0)
Levine (1929)	145	9 (6·2)	2 (1·4)	11 (7·6)
Conner and Holt (1930) ..	151	N.D.	N.D.	7 (4·6)
Stockmann (1934) ..	33	3 (9·1)	1 (3·0)	4 (12·1)
Cowan and Ritchie (1935)	100	N.D.	N.D.	4 (4·0)
Jervell (1935)	69	4 (5·8)	2 (2·9)	6 (8·7)
Oille and Rykert (1935) ..	37	6 (16·2)	0	6 (16·2)
Salcedo-Salgar and White (1935)	328	8 (2·4)	4 (1·2)	12 (3·6)
Saphir and others (1935)..	34	2 (5·9)	0	2 (5·9)
Sprague and Orgain (1935)	61	N.D.	N.D.	7 (11·5)
Hochrein (1937)	297	3 (1·0)	2 (0·7)	5 (1·7)
Total	1436	Av. = 5·1	Av. = 2·6	Av. = 7·4

N.D. = not differentiated. Av. = average percentage.

DESCRIPTION OF CASES

I have recently had at my disposal the case records of the Cardiac Department of the London Hospital, and others from a consulting practice. Among them there were 13 cases of coronary thrombosis complicated by heart-block.

Of the 13 patients, 12 were male and 1 was female. Their average age when first observed was 59·1 years. In 4 cases the P–R interval was prolonged, in 4 there was partial heart-block, and in 5 complete heart-block. Adams-Stokes attacks were observed in one of the cases of complete heart-block. All the patients had characteristic symptoms of coronary thrombosis, confirmed by electrocardiograms, and in all of them the evidence of heart-block appeared for the first time subsequent to the thrombosis.

Two patients have been excluded in whom heart-block was present before the occurrence of the coronary thrombosis for which they came under observation. The first of these had a prolonged P–R interval for 5 years before his attack of coronary thrombosis, and 7 years after that attack he was found to have complete heart-block although he had made a good clinical recovery. The other had complete heart-block and Adams-Stokes attacks for 2 months before a coronary thrombosis which proved fatal; no necropsy was obtained.

Naturally, no patient was included in whom such factors as rheumatic or syphilitic infection, or the administration of digitalis, might have operated.

CASE 1.—In September, 1913, a man aged 55 with no previous history of anginal pain, was seized with mid-sternal pain that lasted 24 hours. He vomited several times.

On admission to hospital, some hours after the onset, his pulse was found to be irregular with a rate of 40. The polygram showed partial heart-block, and three days later, complete heart-block, followed by normal rhythm with normal auriculo-ventricular sequence on the 18th day of the illness. There was fever, up to 102° F., for some days during the period of block. An electrocardiogram taken on the 19th day of the illness confirmed the return of normal rhythm, and showed small Q R S complexes, and sharp inversion of the T waves in leads II and III.

He made a complete recovery and was at work as a boot-repairer from 1914–1924. When traced in April, 1923, he complained only of winter cough and some dyspnœa, but had no pain on exertion. The electrocardiogram was normal except for T_3 inversion.

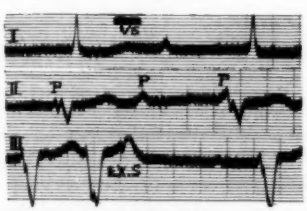

FIG. 1 (Case 2).—Electrocardiogram showing complete heart-block during coronary thrombosis.

He died in February, 1925, 11½ years after the original attack of cardiac infarction, from an illness diagnosed as "chronic bronchitis and asthma." No necropsy was obtained.

This case is of special interest, as the electrocardiogram taken in 1913 showed changes which we know now to be typical of coronary thrombosis.

CASE 2.—A man aged 59 was seized by severe pain in the left arm and across the chest, which lasted about 12 hours and was accompanied by vomiting and shortness of breath. He had pyrexia for the next 5 days and during this time the pulse-rate was found to be 44–50 per minute.

On examination, 2 months later, his pulse-rate varied between 40 and 50, and an electrocardiogram (Fig. 1) showed complete heart-block, with bizarre ventricular complexes. In some records the T waves were inverted in lead III. He still had frequent pains in the chest and dyspnœa 15 months after the attack. The pulse-rate was 34, and the electrocardiogram showed complete heart-block.

He died suddenly 18 months after the onset of the illness. No necropsy was obtained.

CASE 3.—A tailor aged 38 was wakened from sleep by a tight pain across the chest, which made him feel faint but he did not lose consciousness.

When seen an hour later his pulse-rate was 40. The pain lasted all night. A week later, he had a second attack—in which the pain was more severe, and lasted two days. During this time the pulse-rate was 40–50. There were recurrences of pain during the next few days, with spread to both arms. An electrocardiogram (Fig. 2A) taken a fortnight after the first attack showed a rate of 94, a P–R interval of 0·4+ sec., flat T waves in lead II, large Q waves, and inversion of the T waves in lead III.

During the following month, the pulse was sometimes as infrequent as 50, and showed dropped beats, but later it became regular. Two and a half months after the onset, he complained of slight sternal pain coming on at any time. The pulse was regular with a rate of 80 per minute. The electrocardiogram (Fig 2B) showed a normal P–R interval, and inversion of T in lead III. A year later he was reported to be almost free from cardiac symptoms.

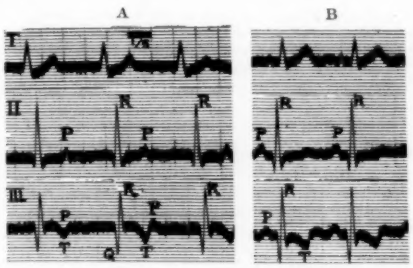

FIG. 2 (Case 3).—(*a*) Electrocardiogram showing heart-block with prolonged P–R interval (0·4+seconds). The T wave in lead II is flattened. In lead III the Q wave is large, and the T wave is sharply inverted, T_3 type, and the P wave coincides with it, or follows immediately upon it, owing to the prolonged P–R interval. (*b*) Electrocardiogram taken two months later, showing a normal P–R interval, with persistence of T wave inversion in lead III.

CASE 4.—A commercial traveller aged 68 was admitted having had pain across the chest on exertion for six weeks. For two weeks before admission, the pain across the chest had become almost continuous, with nausea and occasional dyspnœa.

On examination he was in obvious pain and slightly dyspnœic. The pulse-rate was 50. An electrocardiogram showed complete heart-block, with R–T deviation, a negative T wave in lead III, and slight inversion of the T wave in lead II. He died four days later.

Necropsy.—Heart failure. Yellow infarct of whole of posterior wall of both ventricles and of right half of anterior wall of right ventricle. Area of slight fibrosis in upper part of margo obtusa. Ante-mortem thrombi in the first 4·5 cm of right horizontal coronary artery, and in left horizontal 2 cm. from its origin. Very severe atheroma of coronary arteries: fatty and calcareous buttons and plaques, mainly confluent, throughout all their main branches. Considerable atheroma of aorta and its large branches. Cardiovascular hypertrophy (heart 25 oz.). Congestion and slight ischæmic fibrosis of kidneys.

CASE 5.—A man aged 68 suddenly felt short of breath and giddy, with slight epigastric discomfort, and called in his doctor, who found a pulse-rate of 30.

He had a slight temperature during the next few days, and the epigastric discomfort and dyspnœa remained. An electrocardiogram showed complete heart-block, with deviation of the R–T interval in all leads. Dyspnœa became pronounced, and he died after a week's illness, with Adams-Stokes attacks which did not respond to adrenaline subcutaneously. No necropsy was obtained.

CASE 6.—A commercial traveller aged 58 was admitted with the history that while walking in the street a few hours previously, he was seized by a severe crushing pain in the front of the chest, which made him stand still. It became worse and he lost consciousness for a short time.

When admitted, still in severe pain, he was grey, cold, and clammy, with a pulse-rate of 28. The heart-sounds were inaudible. Morphine relieved the pain almost at once. His condition had improved 5 hours later, and the pulse was regular, with a rate of 80. During the next few days he was slightly febrile. An electrocardiogram taken 29 days after the attack showed a T_3 type of coronary thrombosis with no conduction defect. He had no further attacks of pain when in hospital and went home feeling well. When seen 3½ years later he looked well and stated that he was able to work, in spite of occasional twinges of sternal pain. The electrocardiogram still showed inversion of the T waves in the second and third leads.

CASE 7.—A man aged 66 had a sudden attack of severe pain across the chest, lasting several hours, accompanied by dyspnœa. When seen by his doctor 12 hours after the onset, he was grey and sweating and had a pulse-rate of 44. An electrocardiogram showed 2:1 heart-block, with a ventricular rate of 46, and slightly abnormal ventricular complexes. A year later his pulse-rate was 48 and he still had dyspnœa on slight exertion.

CASE 8.—A retired sailor aged 60 was admitted on account of signs of heart failure, especially dyspnœa and œdema. His pulse was found to be irregular, and an electrocardiogram showed a high-grade partial auriculo-ventricular block of varying degree, with the common type of bundle-branch block.

He had an attack resembling an Adams-Stokes seizure 11 days after admission. At this time the pulse showed a great tendency to miss beats, the rate varying between 58 and 44.

He was discharged, but had to be readmitted in two months' time on account of severe heart failure. The electrocardiogram again showed a partial auriculo-ventricular block with dropped beats and the common type of bundle-branch block.

He died five days after readmission.

Necropsy.—Heart failure. Considerable dilatation and hypertrophy of all chambers of heart (24½ oz.). Fibrosis of myocardium involving apex of left ventricle, a small part of the right extremity of the anterior wall of the left ventricle above the apex, the lower quarter of the interventricular septum and a linear area (0·5 cm. wide) extending therefrom to the upper part of the inter-ventricular septum. Separate area of fibrosis (4 cm. diam.) in upper end of margo obtusa, with a very narrow linear extension down to its lower end. Granulating and fibrosed microscopic areas of infarction throughout the upper three-quarters of the interventricular septum. Great stenosis of anterior descending coronary artery, 4 cm. from its origin, by atheromatous nodule dissected and expanded by thrombus undergoing early organisation. Great stenosis by atheroma of large branch passing from anterior descending coronary to the margo obtusa. Focal stenosis by atheroma of left horizontal coronary artery 7·5 cm. from aorta. Severe fatty and calcareous atheroma and slight dilatation throughout remainder of coronary arteries. Considerable atheroma of aorta and its large branches.

CASE 9.—A man aged 62 was admitted with the history that for 6 weeks he had had attacks of sternal pain, brought on by exertion, and relieved by rest and by trinitrin tablets. Four days before admission he had a sudden more severe sternal pain, which radiated to the left breast, neck, angle of the jaw on the left side, and down the left arm. This pain came on while he was at rest, and was not relieved by trinitrin. It lasted 3 hours, and made him dyspnœic and restless. There were four similar attacks of pain before he was admitted to hospital.

An electrocardiogram taken the day after admission showed inversion of T in leads II and III, R–T deviation in leads I and III, and partial auriculo-ventricular block with dropped beats. He improved temporarily but died suddenly after three days in hospital in what may have been another attack of coronary thrombosis. No necropsy was performed.

CASE 10.—A boot-repairer aged 59 stated that in 1933, and again in 1935, he had suffered from attacks of pain in the mid-sternal region and left arm. The pain sometimes came on during exertion and sometimes at rest. He was admitted to hospital complaining of breathlessness on exertion and occasionally when at rest.

Examination showed that the apex-beat was in the sixth left interspace, in the anterior axillary line, the whole thoracic wall over the apical area moving with the heart's action. The heart was seen to be much enlarged to the left on X ray examination—with "shelving" on the left border highly suggestive of a cardiac aneurysm. The electrocardiogram showed a P–R interval of 0·22 sec., slight inversion of the T wave and R–T deviation in lead I. When re-examined four months later, his condition was unchanged. The electrocardiogram showed a normal P–R interval, right ventricular preponderance, and inversion of T in lead I, with flat T waves in leads II and III.

CASE 11.—A male shop assistant aged 54 stated that he had been seized with a "pressing" pain in the middle of the lower part of the chest while walking. He had to sit down and began to sweat profusely. His doctor saw him two hours after the onset of the pain, found the pulse irregular, and gave him morphine which relieved the pain.

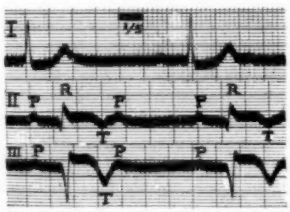

FIG. 3 (Case 11).—Electrocardiogram taken four days after the onset of coronary thrombosis, showing 2:1 auriculo-ventricular block, upward deviation of the R–T interval in leads II and III, with inversion of T, T_3 type.

On admission to hospital two days later his pulse was irregular, the rate being 72. He was restless and perspiring. An electrocardiogram (Fig. 3) taken four days after the attack showed 2:1 auriculo-ventricular block, upward deviation of the R–T interval in leads II and III, with inversion of T, "T_3" type. Four days later there was normal auriculo-ventricular sequence and a P–R interval of 0·28 sec., with R–T deviation in leads II and III, and inversion of the T waves as before. Eleven days later the P–R interval was 0·2 sec., there was no R–T deviation, and the T waves were inverted in leads II and III. He made an uneventful recovery.

CASE 12.—A woman aged 66 had coronary thrombosis in 1933. Electrocardiograms at that time showed a P–R interval of 0·2 sec. and inversion of the T waves in lead I. In 1937 she had another attack of severe sternal pain, which began when she was in bed and lasted one hour. An electrocardiogram showed the common type of bundle-branch block and a P–R interval of 0·22 sec. She made a good recovery and a further electrocardiogram taken three months after her second attack showed left ventricular preponderance (old terminology), inversion of T in lead I and R–T deviation in leads I and III, with a P–R interval of 0·2 sec.

CASE 13.—A man aged 56 was seized by epigastric pain and a "squeezing" sensation in the chest, which became very severe and lasted for some hours. On examination a day later, his pulse-rate was found to be 50. An electrocardiogram taken two days after the onset showed a prolongation of the P–R interval (almost 0·4 sec.), and S–T elevation in leads II and III, with inversion of the T waves in these leads. A further electrocardiogram taken 19 days after the onset of the illness showed a P–R interval of 0·2 sec., S–T deviation, and inversion of the T waves in leads II and III. The patient made an uninterrupted recovery.

Of the 13 cases here described, 7 made good clinical recoveries, with disappearance of the heart-block. This applied to all 4 cases with no more than a

prolongation of the P–R interval. Of the 4 examples of partial heart-block, 1 made a good recovery, 2 died, the one in failure within a few weeks, the other probably from further coronary thrombosis within a few days, and the remaining case was reported to have bradycardia and dyspnœa one year after the acute attack. Of the 5 examples of complete heart-block, 2 recovered almost entirely: one of them lived for 11 years and died from "bronchitis and asthma," the other is alive and still fit for work 4 years after the coronary thrombosis. The remaining 3 cases in this group died, one in an Adams-Stokes attack a week after the thrombosis, another 6 weeks after, and another 18 months after the acute attack. Necropsies were performed in 2 of the 5 fatal cases in which the heart-block persisted until death.

DISCUSSION

Apart from recognising heart-block as a complication of coronary thrombosis, we may consider the matter in another way, and ask what place should be allotted to cardiac infarction in the ætiology of clinical heart-block. It appears that coronary thrombosis is rarely the original cause of an established heart-block, but it is necessary to examine this question from two aspects.

In a series collected simply because of the presence of block, as shown by electrocardiograms, irrespective of whether it is acute—e.g. following on coronary thrombosis—or chronic—e.g. the ordinary clinical case of established heart-block—how many would belong to the first or acute group? I have been unable to find any adequate answer to this question.

On the other hand, apart from acute examples, in what proportion of cases of chronic heart-block seen as such, or on account of symptoms excluding coronary thrombosis, would cardiac infarction be the original cause of the block? Published statements bearing on this point are few. Salcedo-Salgar and White (1935) found that 11·9 per cent. of a series of 117 patients with heart-block had a history of coronary thrombosis. Cowan and Ritchie (1935) ascribed 7·7 per cent. of a series of 78 patients with complete heart-block to myocardial infarction.

While a cardiac infarction in the clinical sense may or may not implicate the conducting tissues of the heart, a localised occlusion of the tiny vessel or vessels supplying the conducting tissues may evoke too slight a disturbance to be recognised clinically as a coronary thrombosis, but sufficient to produce heart-block alone. It follows that wherever heart-block appears suddenly, under observation and without other apparent cause, it may be the product of a minimal infarction of the auriculo-ventricular node or bundle. Further information on this point will be found in the works of Géraudel (1928) and Mahaim (1931).

It is not yet certain which of the common varieties of cardiac infarction, divided according to the arterial branch affected, is the one most likely to be accompanied by heart-block. Ball (1932) has stated that the appearance of complete heart-block in acute coronary thrombosis points to right coronary artery involvement in 93 per cent. of cases.

Coronary thrombosis has been compared with cerebral thrombosis in that, owing to adjacent reactions, the area first affected is greater than that permanently affected by the infarction. Thus the end-results can be far less severe than the clinical picture at the onset might lead one to expect. This probably explains why heart-block is so often transitory, when it occurs in cardiac infarction.

The prognosis in cardiac infarction is in general adversely affected if heart-block appears (Levine 1929, Conner and Holt 1930, and White 1937), yet recovery is by no means uncommon, and a fair prognosis is often possible as shown by the cases here recorded.

SUMMARY

1. Some degree of heart-block is an occasional complication of cardiac infarction (coronary thrombosis) and its incidence, reckoning from 1436 published cases of cardiac infarction, is 7·4 per cent.

2. A series of 13 cases is here analysed in which heart-block first appeared under observation during the clinical course of coronary thrombosis. Of these, 4 had the slight degree of a prolonged P–R interval, 4 had partial, and 5 complete heart-block. Seven of the 13, comprising all of the first group, 1 from the second, and 2 from the third, made good clinical recoveries, with disappearance of the block. Of the partial heart-block group, 2 died within a few weeks, and 1 was untraced. The 3 remaining examples of complete heart-block died, one in an Adams-Stokes attack a week after the onset, the other 2 six weeks and eighteen months after the onset. Necropsies were performed in 2 of the 5 fatal cases, and the post-mortem reports are summarised.

3. Coronary thrombosis has to be included among the causes of chronic heart-block seen either on account of bradycardia or clinical symptoms with or without Adams-Stokes attacks. In any collected series of cases of clinical heart-block, those of acute onset from this cause should be separately considered.

4. The conductive tissues may escape completely in an extensive cardiac infarction, while a localised occlusion of the vessels supplying the node and bundle may occur, creating too slight a disturbance to be recognised clinically as a cardiac infarction, though sufficient to produce heart-block.

5. Although the prognosis of coronary thrombosis in general is adversely affected by the complication of heart-block, clinical recovery and disappearance of the block is by no means uncommon.

Dr. R. A. Rowlands and Dr. A. E. Clark-Kennedy kindly gave me permission to describe patients under their care. Prof. H. M. Turnbull and Dr. W. W. Woods, of the Pathological Department of the London Hospital, gave me great help in connexion with the post-mortem records. I am very grateful to Dr. John Parkinson, physician to the Cardiac Department, who suggested this investigation, placed his private case records at my disposal, and advised me throughout.

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PENTOTHAL SODIUM IN INTRAVENOUS ANÆSTHESIA

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Before discussing the impressions gained from a year's experience of Pentothal Sodium, comprising some 200 administrations, a brief résumé of the chemical and physical properties and physiological effects of the drug may be of interest.

PROPERTIES

Pentothal sodium is a lemon-yellow powder with the bitter taste associated with all the barbiturates. It has a slight smell of sulphur and when dissolved in water effervesces with a resultant gas smelling like H_2S. It is made up in ampoules of 0·5 and 1 gramme. Thus if 10 c.cm. of distilled and sterile water be added to the contents of an ampoule, a 5 per cent. or 10 per cent. solution respectively is produced. Chemically the drug is a member of the "light" series of barbiturates having the formula sodium ethylmethylbutylthiobarbiturate.

Physiology.—Pentothal appears to be without effect on the heart except secondarily as a result of anoxæmia from respiratory failure. There is slight vasodilatation but its effects are insignificant. The blood is normally unaffected (Heard 1936). Respiration is always considerably depressed, respiratory failure being the cause of death from a lethal dose in animals; the vasomotor centre is affected only secondarily as a result of anoxæmia. The drug is detoxicated in the liver but there appears to be no evidence normally of any damage. Heard (1936) and Tovell and Thompson (1936) found no significant changes in the urine or blood-urea. It is probable that the drug is completely destroyed in the liver as it is not excreted as such in the urine.

CLINICAL CHARACTERISTICS

Pentothal is considerably more powerful than evipan. Induction is smooth and rapid, the patient showing his lapse into unconsciousness with nothing more than a slight flutter of the eyelids, or in some cases with only a suddenly noticeable loss of expression. Occasionally there is a little sigh, rarely a definite yawn. Sleep thus gently and rapidly induced is not succeeded by muscular relaxation for a further 30–40 seconds. Slackness of the jaw is a useful indication of the presence and depth of relaxation during the subsequent anæsthesia. Other signs of anæsthesia are much the same as usual.

The pupils dilate at first, but they are not reliable, especially after morphia. The conjunctival reflex is absent during surgical anæsthesia, and the corneal reflex is abolished by deep anæsthesia. All the signs are liable to swift changes owing to the rapid effect and destruction of the drug in the circulation.

Blood pressure.—There is a slight fall early on which is usually soon regained in reasonably fit patients.

The *pulse* is usually regular and slightly faster than normal at first. Occasionally, dropped beats have been noted but are rare and appear to be without significance. Weakness of the pulse and a rise in rate only become apparent if the concentration of the drug in the circulation is approaching an overdose and are due to the resultant anoxæmia from the degree of respiratory depression thus engendered. This must be avoided by careful dosage.

Colour.—Slight cyanosis may appear if the anæsthesia is very deep and, while giving in itself no cause for alarm, must be corrected by the addition of oxygen.

Respiration is very quiet, sometimes imperceptible. As long as the colour remains good, no danger need be anticipated. If depression is extreme and marked cyanosis is manifest, oxygen and carbon dioxide should be administered under pressure.

Relaxation is as a rule excellent, jactitations and twitching being conspicuous by their absence.

Controllability.—An oft-raised objection to anæsthetics parenterally administered is that the dose once introduced cannot be recovered. Pentothal, however, compensates for this disadvantage to a great extent by a rapidity of detoxication within the body that compares favourably with the elimination of ether and is far more rapid than that of chloroform. Given in repeated small doses it presents practically minute to minute controllability.

Overdose.—The cardinal signs of overdose are deep cyanosis with imperceptible respiration, and later cessation of respiration. The pulse remains strong and steady for an appreciable time before becoming weak and imperceptible as a result of cardiac and vaso-motor asphyxia.

The signs of overdose may develop very quickly as a result of a too rapid injection, or they may appear suddenly owing to a cumulative effect produced by injections repeated too frequently, without due calculation of dosage. The way to avoid these undesirable manifestations lies in slow and careful injection, coupled with minute attention to the respiratory phenomena and other details of the patient's condition.

TECHNIQUE

In all but trivial cases premedication is essential for really smooth and satisfactory anæsthesia, besides which it is a blessing for the nervous patient. Personally I favour Jarman's technique of omnopon gr. $\frac{2}{3}$ and hyoscine gr. 1/150 for all fit patients. Smaller doses can be used for other cases as experience and conditions suggest. Most British workers (Heard 1936, Jarman 1936, van der Post 1936) seem to be agreed that other barbiturates should be avoided as premedicants, owing to the danger of cumulative effects.

A clear airway is absolutely essential as any impediment to breathing is not quickly detected owing to the shallow nature of the respiratory movements and attention is only drawn to the presence of obstruction by the rapid development of cyanosis. For this reason three criteria are of paramount importance before starting the injection.

1. A prop must be placed in the patient's mouth; Hewer's airway or a dental prop both answer the purpose well.

2. There must be in the theatre an apparatus capable of delivering oxygen (and if possible carbon dioxide also) under pressure.

3. Administrations should never be attempted single-handed.

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A nurse or other attendant should always be at hand to support the patient's jaw and maintain the airway if necessary, while the administrator has his hands occupied in making his injection.

Dosage.—The average case takes from 0·25 g. to 1 or 1·5 g., depending on the type of patient and the duration of anæsthesia. It has become my practice to start with the 5 per cent. solution for induction as I find that this takes place more smoothly than with the 10 per cent., and also that the development of anæsthesia is easier to follow. For the maintenance of anæsthesia the 10 per cent. solution is more convenient, as a smaller quantity is injected at a time and consequently the syringe will not need recharging so frequently. As regards the maximum quantity of the drug which may safely be administered (fractionally of course) there would seem to be no more definite laws than with other anæsthetic substances, the anæsthetist being guided by his own experience and the patient's condition. Lundy (1935) reports a case in which the total amount of pentothal given was 2·27 g. over a period of anæsthesia of 3½ hours; there were no ill effects.

Rate of injection.—The first 2–3 c.cm. should be injected in about 15 seconds. There should then be a pause of at least 30 seconds to observe the effects of this. If all is well the injection may be continued cautiously till the desired depth of anæsthesia is reached. The amount up to 10 c.cm. (0·5 g.) can only be gauged by experience.

Overdose.—Should the signs of overdose appear the question of the efficiency of the airway must be investigated at once. If necessary the patient should be intubated through the nose, with the aid of a Magill's laryngoscope. The vocal cords will be found in abduction if respiration has ceased. Carbon dioxide and oxygen should be administered under pressure and by rhythmical inflation of the lungs. Coramine appears to be the best antidote and should be given intravenously and liberally, 5 c.cm. or more.

There are three chief methods of administering pentothal. It may be used as a quick and pleasant induction, not only for general anæsthesia but also for spinal analgesia. The former technique is simple and needs no special description, general anæsthesia following the induction smoothly and easily. For the latter the technique taught me by Jarman is worthy of description.

The patient receives premedication in the usual way. Just before the spinal injection the patient is induced with 5 per cent. solution of pentothal. As soon as the anæsthesia is established he is sat up and supported, with the spine well flexed, by an attendant on either side, care being taken that the jaw is held well forward and the airway maintained. Lumbar puncture is performed in the chosen space and the percaine injection is made, following the now well-known Wilson technique (1934). Light gas-and-oxygen anæsthesia may be then maintained to keep the patient unconscious when the effects of the pentothal begin to wear off.

Pentothal may be used alone for shorter or longer cases.

For short cases and minor operations premedication is not essential but the agent is not suitable for out-patient use because though consciousness is rapidly regained after small doses, sometimes in as short a time as 5–10 minutes, ataxia and incoördination may persist for an hour or so. For longer cases repeated injections may be made from time to time during the operation to maintain the depth and prolong the length of anæsthesia, 0·5–3 c.cm. of 10 per cent. solution being used as described above.

A more convenient method is that described by Jarman and Abel (1936).

By means of the ingenious apparatus they have constructed, a 10 c.cm. syringe with three-way flow is fixed to the patient's arm and is connected by a short piece of rubber tubing to a needle introduced into an antecubital vein and left there for the duration of the operation. If the three-way tap is central pentothal can be injected from the syringe, if the tap be turned to the right saline or blood can be infused through the needle from a reservoir and tubing by the drip method, thus combating shock and fluid loss. If the tap be turned to the left fresh solution of pentothal can be drawn into the syringe as required.

Thus pentothal can be injected in fractional doses as required, securing as perfect a control over the anæsthesia as with the administration of the older anæsthetics by the inhalation method. Also, in emergencies stimulant drugs can reach the circulation rapidly and easily.

Using pentothal for continuous administration a smooth and even anæsthesia can thus be maintained, an increase in the depth of respiration beyond a predetermined level being the best indication for a further fractional dose. Other indications are the return of the conjunctival and corneal reflexes, and stiffening of the jaw muscles, the condition of the latter giving a very good idea of the relaxation obtaining throughout the body generally.

Lastly, pentothal can be used combined with gas-and-oxygen. This method is excellent where ether is contra-indicated, the activity of the respiratory centre can be well maintained with partial rebreathing and the lungs well ventilated at the end of the operation with carbon dioxide and oxygen.

AFTER-EFFECTS

Patients who have been anæsthetised by inhalation methods previously to their introduction to pentothal emphasise the quiet and calm awakening experienced with the latter. They come to, as from a refreshing sleep to a condition first of mild euphoria and shortly after to one of clear-minded consciousness. They are rarely troubled with the common sequelæ of inhalation anæsthesia—i.e., headache, nausea, and vomiting. Occasionally a slight taste of sulphur is noticed. Post-operative complications are conspicuous by their absence. Restlessness is very unusual, most patients after the more serious operations and who have their usual sedative on coming round, drift off to sleep again very quietly and peacefully.

INDICATIONS

The range of usefulness of the drug is wide, and much depends upon personal judgment and experience. Thus only broad principles can be dealt with.

Psychological.—Unquestionably a slight prick in the arm followed quickly by an almost instantaneous "black-out"—a common description—is preferable to the suffocating sensations of gas or the sickly smell of the volatile agents, especially in the nervous and apprehensive patient.

In short cases and minor operations—painful dressings, suturing cuts, setting fractures, dilatations and curettages—it is the quickest, simplest, and most pleasant method, and seems so far to have been extremely safe in the hands of those who have worked with it.

Ether.—There are many cases in which ether must be avoided if possible—those with chest complications or in the big and shock-producing abdominal operations, such as abdomino-perineal resection of the rectum, where ether can only increase the degree of shock—in which pentothal can be of great service in combination with a spinal technique.

In diathermy, closed circuit gas-oxygen-ether or chloroform are the alternatives. The latter, our most toxic anæsthetic agent, is fast disappearing from modern practice, and pentothal surely is simpler and easier to use than closed-circuit methods, also it is absolutely proof against fire and explosion.

Before *spinal analgesia* the drug saves the patient all the unpleasant ceremonial and ordeal inseparable from the routine of lumbar puncture.

An idea of the range of cases in which pentothal may be used with success can be gained from Heard's

DETAILS OF SELECTED CASES

Case No.	Age and sex.	Premedication. Omnopon.	Premedication. Scopolamine.	Operation.	Duration.	Amount (grammes).	Pentothal administration.
1	43 F.	½	1/150	Anterior & posterior colporrhaphy.	1½ hrs.	2·0	Cont.
2	57 F.	½	1/150	D. & C. Hæmorrhoids.	1 hr. 10 min.	1·5	„
3	29 F.	½	1/150	D. & C. Insufflation. Diathermy of cervix.	40 min.	1·1	Rep.
4	35 F.	½	1/150	D. & C.	30 „	1·3	„
5	54 F.	½	1/150	Appendix.	45 „	1·2	Rep. + Gas & O_2.
6	49 F.	½	1/150	Dilatation & diathermy of cervix.	35 „	1·0	Cont.
7	40 F.	½	1/150	D. & C. Biopsy of cervix.	40 „	1·4	Rep.
8	35 F.	½	1/150	D. & C. Insufflation. Diathermy of cervix.	45 „	1·7	Cont.
9	47 F.	½	1/150	D. & C.	15 „	0·5	Single.
10	32 F.	½	1/150	D. & C.	10 „	0·5	„
11	28 F.	½	1/150	D. & C. Insufflation. Ventrosuspension.	1½ hrs.	0·5	Induct. Gas & O_2. Ether ℥ij. CO_2-absorption.
12*	16 M.	Atropine 1/75		For ingrowing toenail.	15 min.	1·3	Rep.
13	48 F.	½	1/150	D. & C.	30 „	1·8	„
14	47 F.	½	1/150	D. & C.	30 „	0·5	Induct. Gas & O_2.
15	32 F.	½	1/150	D. & C.	35 „	1·5	Rep.
16	49 F.	½	1/150	Ant. & post. colporrhaphy.	2 hrs.	2·0	Cont.
17	30 F.	½	1/150	D. & C. Insufflation. Diathermy.	30 min.	1·1	Rep.
18*	40 F.	½	1/150	D. & C.	25 „	1·2	„
19	34 M.	Nil.		Cleaning & tanning burnt arm.	15 „	1·0	„
20	69 M.	Nil.		Removal papilloma of arm.	12 „	0·75	„
21	48 M.	½	1/150	Hæmorrhoids.	45 min.	1·8	Cont.
22	19 M.	½	1/150	Lacerated hand. Suture tendons, &c.	45 „	1·5	Rep.
23*	48 F.	½	1/150	Cholecystectomy.	1½ hrs.	0·5	Induct. Percaine 14 c.cm. Gas & O_2.
24	52 M.	½	1/150	Hernia.	45 min.	1·3	Cont.
25	53 M.	½	1/150	Hydrocele.	45 „	1·2	„
26	66 M.	½	1/150	Colostomy.	20 „	0·5	Induct. Gas & O_2.
27*	54 M.	½	1/150	Cold abscess sacrum.	12 „	1·0	Rep.
28*	46 M.	½	1/150	Amputation toe.	25 „	1·0	„
29*	42 M.	½	1/150	Spermatocele.	45 „	1·3	Cont.
30	48 M.	½	1/150	Hernia. Fascial graft.	1½ hrs.	1·8	„
31	56 M.	½	1/150	Hernia.	65 min.	0·5	Induct. Percaine Gas & O_2.
32	33 M.	Morph. ½ Atron. 1/100		Cystoscopy.	15 „	0·75	Rep. Gas & O_2.
33	21 M.	½	1/150	Appendicectomy.	30 „	1·0	Rep. Gas & O_2.
34	38 M.	½	1/150	Gastro-enterostomy.	1½ hrs.	0·5	Induct. Gas, O_2, Ether.
35	23 F.	½	1/150	Excision of branchial remnants.	12 min.	0·1	Single.
36	42 F.	½	1/150	Radical breast.	45 „	0·5	Induct. Gas & O_2.
37	44 M.	½	1/150	Cystoscopy. Fulguration.	25 „	1·5	Rep.
38	53 M.	Nil.		Amputation finger.	20 „	1·5	„
39	19 M.	Nil.		Manipulation back.	5 „	0·25	Single.
40*	78 F.	½	1/100 Atropine.	Cholycystectomy. Perforated gall-bladder.	50 „	1·0	Cont.

Cont. = continuous method. Rep. = Repeated doses. Single = a single dose. Induct. = used for induction only.
* Cases commented upon in text.

(1936) series which included examples of carcinoma, diabetes, anæmia, obesity, myocardial degeneration, spinal tumour, and lung abscess. Most of these cases can hardly be classified as good risks. Lundy (1935) gives an even larger series of cases ranging from brain operations and urology to thoracic and abdominal operations totalling 700 cases.

The Table shows the particulars about 40 of my cases. The following illustrate several special points:

CASE 12, a boy aged 16, required 1·3 g. for 20 minutes anæsthesia. It often happens that the youngest patients show considerable tolerance. No preliminary opiate was given.

CASE 18 illustrates the importance of a mouth prop. It was inadvertently omitted and its absence overlooked, with the result that respiratory obstruction developed unnoticed. Carbon dioxide and oxygen under pressure had no effect, and very soon her colour deteriorated and the pulse became rapid and weak. She was placed in a steep Trendelenburg position, and immediately began to breathe again owing to the airway becoming clear in this position. An airway was immediately inserted and everything then proceeded smoothly.

CASE 23 was a very difficult case of cholecystectomy. Induction was pleasant for the patient, the spinal produced the best possible conditions for the surgeon. Gas-and-oxygen maintained the patient's CO_2 content, and the resulting shock was minimal.

CASE 27 was a particularly powerful man requiring 1 g. for 12 minutes' anæsthesia.

CASE 35 showed just the opposite condition, the first 2 c.cm. (0·1 g.) producing a fairly deep anæsthesia lasting

12 minutes. A dose of 0·5 g. given rapidly would possibly have been fatal.

CASE 38, an emergency, without preparation, was a war-gas case, with a severe chronic bronchitis and copious sputum. Ether was entirely avoided.

CASE 40 was the oldest * of my patients, aged 78. She said she felt better on the day after the operation than before, and the absence of shock was little short of astonishing.

CONTRA-INDICATIONS

Children.—Pentothal is not more suitable than any other intravenous technique for these patients, the psychological trauma and physical difficulties of venupuncture are two good reasons against its employment. Also the question of the airway arises, since the glottis in children is narrow and very easily obstructed.

Respiratory obstruction.—Cases presenting this complication, including tumours and inflammation in and around the neck, and conditions in the chest producing pressure on the respiratory passage, are definite contra-indications. Inflammation in the neck, with its liability to produce œdema of the glottis, is peculiarly dangerous.

Dyspnœa.—Affections causing dyspnœa are not suitable for this technique, asthma patients particularly being bad risks.

Liver.—An impaired liver cannot detoxicate pentothal efficiently.

Kidneys.—Factors involving delayed excretion from these organs must be taken into consideration before deciding on the administration of such a drug as pentothal, although Tovell and Thompson (1936) mention three cases of patients suffering from renal tuberculosis in which it was used with satisfactory results.

Severe toxæmia.—Here again the liver is probably adversely affected and elimination may not take place for many hours.

Severe anæmia and debility generally, also low blood pressures and severe shock, are definite contra-indications.

COMPARISON WITH OTHER BARBITURATES

The barbiturates that have been used for intravenous anæsthesia are divisible into "heavy" and "light." The light group have so many advantages—quick action and elimination, increased safety—over the heavy group (comprising chiefly Nembutal, Amytal, and Pernocton) that the latter with their slow recovery rate, their frequent post-operative restlessness, &c., have been largely abandoned in surgical anæsthesia (Hale 1935).

There remain to be considered only two other drugs of importance besides pentothal, and they are Eunarcon and Evipan. Eunarcon is a compound which is stable in solution and which is supplied ready dissolved in ampoules. I have no personal experience of this drug but fatalities from respiratory failure have been recorded; Hewer (1937) mentions two cases.

Evipan was of course the pioneer barbiturate for producing complete anæsthesia intravenously. Pentothal however has distinct advantages. Induction is smoother and quicker, and anæsthesia is more certain, for total failure has been recorded with a full dose of evipan, and I myself once could obtain only two minutes' anæsthesia in a healthy man. Jactitations, twitchings, and coughing are fairly common with evipan, but with pentothal these manifestations are extremely rare and the laryngeal spasm that sometimes occurs with evipan has been met but successfully overcome without resorting to other anæsthetics. Relaxation with pentothal is much greater, less of the drug is required to produce any desired depth or length of anæsthesia, and lastly, elimination is more rapid.

* Since writing this I have successfully anæsthetised a man aged 83 years with excellent results.

The main disadvantages of pentothal are: First, that if any of it should be injected extravenously a sore arm may result, but this is usually transient if one or two fomentations are applied as soon as possible; I have never seen actual ulceration or loss of tissue. Secondly, there seems to be a tendency for thrombosis at the site of the injection to occur; this is exceedingly rare and can almost always be avoided if the injection is made slowly and not squirted into the vein in jets, and if for induction (when the largest single injection is likely) the 5 per cent. solution is used.

CONCLUSIONS

It must be emphasised that pentothal is not a drug with which liberties may be taken. This of course applies to all the barbiturates, especially when given intravenously; not only is pentothal a barbiturate but it is probably the most powerful yet produced. In experienced hands it seems to be quite as safe as evipan, and is certainly a great deal safer than chloroform and its mixtures which have the added risks of pulmonary complications and liver damage.

Used with care in the selection of cases and technique of administration there can be no possible doubt in the minds of those who have worked with it and considered it without bias that it is one of the most valuable advances in the science of anæsthesia that has been made in recent times.

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Clinical and Laboratory Notes

AN UNUSUAL CASE OF INTESTINAL OBSTRUCTION

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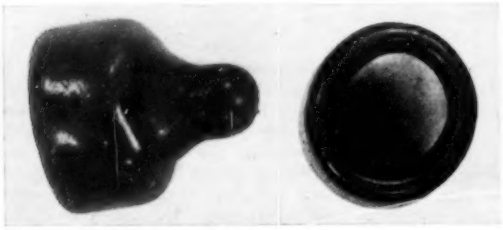
THE patient, a girl one year old, was in good health until Sept. 2nd when she vomited after breakfast. The mother gave her a drink of water and a few minutes later she vomited again. In the course of the day she had two more vomits. A doctor was called in and he prescribed a bismuth mixture.

On Sept. 3rd the child was better and took her food well but vomited once during the day. On the two following days she was very bright and cheerful and apparently quite well. However, throughout the period Sept. 2nd to 5th she had been constipated. Accordingly on Sept. 5th she was seen by another doctor who prescribed hydrarg. cum cret. gr. ½. Next day she was still constipated and the doctor ordered an enema but without result, neither flatus nor fæces being passed. At 10 P.M. the same day the child, who had hitherto been taking her food quite well, resumed vomiting. The doctor ordered a second enema, again without result. At 12.30 A.M. on Sept. 7th she was sent to the Belgrave Hospital as a case of ? intussusception ? volvulus. Questioned at the hospital the mother disclosed that on Sept. 1st, after the child had been fed in the morning, the rubber valve of the feeding-bottle was missed and that a careful search had failed to discover it.

On examination on Sept. 7th the child showed signs of dehydration. The tongue was clean. The abdomen was

slightly but not unduly distended. There was no visible peristalsis, no rigidity, and no tenderness. In fact the abdomen was quite soft. On rectal examination two or three masses of hard fæces were felt, and these were evacuated when the finger was withdrawn. An enema resulted in the discharge of two or three masses of fæces, as well as of flatus. There was no trace of blood. A radiogram disclosed no abnormality. Subcutaneous saline was administered and the child dozed off into a sleep from which she did not wake till 7 A.M. At 10 A.M. she had a loose greenish-yellow stool, which was very foul-smelling.



The valve (diameter 2·6 cm.).

On Sept. 8th she had one vomit, but appeared to be keeping well. Next day there were two small vomits. The abdomen was not distended, and there was no visible peristalsis. The child was taking fluids well but there had been no bowel action for two days.

On Sept. 10th she would not take anything by mouth; she had three small vomits in the course of the day, and at 5 P.M. a large fæculent vomit. There was abdominal distension, and peristalsis was visible for the first time. Subcutaneous saline was administered and a laparotomy was performed under gas-oxygen and ether anæsthesia. The small intestine was very much distended and at the ileocæcal valve the rubber valve of the feeding-bottle was found. It was so placed that the blind end was in the cæcum, causing an obstruction. The valve was removed by incising the intestine, the intestine was sutured, and the abdomen closed, a drainage-tube having been placed. The child recovered from the operation, but at 3 A.M. next day developed signs of circulatory failure and died at 8 A.M.

The interesting features of this case are: (*a*) the belated disclosure that the valve had disappeared and the subsequent passage of some days before the onset of definite symptoms which suggested that the mother's fear was well founded; (*b*) the fact that the valve travelled down the œsophagus and small intestine without giving rise to obvious symptoms. The obstruction caused by this valve is comparable to the rare condition of intestinal obstruction by a gall-stone in adults.

I am grateful to Mr. M. F. Nicholls for permission to publish this case.

AFTER-SHOCK IN THE INSULIN TREATMENT OF SCHIZOPHRENIA

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ONE of the most important risks of Sakel's hypoglycæmic shock treatment of schizophrenia is the occurrence of after-shock. In this condition a patient who has had an induced state of hypoglycæmia removed by the administration of sugar relapses into sudden unconsciousness within the next 24 hours.

The symptoms are the rapid development of drowsiness which causes the patient to lie down; sleep and then coma follow within a very short time. As a rule however the onset is at night during sleep; all that is then noticed is that the patient is cold and sweating profusely; attempts to rouse him are unsuccessful and double up-going plantar responses are elicitable.

The treatment of the condition, though urgent, is simple, and consists in passing a nasal tube and introducing into the stomach a solution of 7 ounces of glucose in 14 ounces of water. The patient then wakes up in 10–30 minutes and soon recovers his full energy. This rapid return to normal activity is very remarkable and there seems to be no hang-over or state of exhaustion afterwards.

In my series of 8 cases, 4 different patients showed after-shock on 16 occasions; in 8 instances the condition was discovered in time for the patient to be roused to drink the sugar solution, but on the other 8 occasions the coma was already too deep and nasal sugar was needed. Wherever there is any doubt it is essential to give the sugar nasally as there is a serious risk of aspiration into the lungs.

In 3 instances the condition appeared just before tea-time; in the other 13 the onset was between 9 P.M. and 3 A.M. The average dose received by these patients was 250 units of insulin on the morning preceding the after-shock, the minimum dose causing it being 170 units and the maximum 300 units.

Unlike the epileptiform fits which are another complication of insulin treatment, and which sometimes have high therapeutic value, after-shock is thoroughly undesirable and is to be avoided. It is now my practice to give at 9 P.M. on each night of treatment 3½ oz. of glucose in solution to those patients who have received an injection of 200 units or more in the morning; and to give 7 oz. of glucose in solution to those whose dose is more than 250 units of insulin. This has so far prevented after-shock and has not interfered with the next day's hypoglycæmic coma, which is just as deep as if no evening sugar had been given the night before (i.e., on a "rest day"). On one occasion in a patient who was receiving a morning injection of 300 units of insulin, the nurses were ten minutes late in appearing with the 9 o'clock sugar and found the patient unrousable so that nasal feeding was necessary.

In more than half the cases the usual insulin injection was given at 7.30 next morning despite the occurrence of after-shock during the previous night, and the resulting coma was not different from normal.

The danger of after-shock is so serious that all patients undergoing insulin treatment for schizophrenia should sleep under observation. In several instances the drowsiness occurred in a patient who was already mentally quite well and who had experienced after-shock before; nevertheless she was not able to tell anybody that she needed sugar and on one occasion, when led from the tennis-court where she had been playing, said that all she required to put her right was to lie down for a short time. In a few minutes she was unconscious and was given sugar through a nasal catheter.

I am excluding from consideration those patients who, having vomited the sugar given them to terminate a state of coma, again fell into unconsciousness after having been awake. This vomiting tends to be frequent unless a teaspoonful of alkaline bismuth powder is added to the sugar solution, and this addition is essential for those whose stomachs are readily irritated by sugar.

The mechanism of production of after-shock seems to be that the continued high doses of insulin cause

(*Continued at foot of opposite page*)

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTIONS OF MEDICINE AND THERAPEUTICS

Dr. E. LETHEBY TIDY, president of the section of medicine, took the chair at a joint meeting of these sections on Oct. 26th, when a discussion on the treatment of bacterial diseases with

Sulphanilamide and Related Substances

was opened by Dr. LEONARD COLEBROOK. Tracing the history of the development of these drugs, he explained that it dated back to the time, several years ago, when the German chemists found that in order to make an aniline dye fast for vegetable fabrics it had to be built up with a double nitrogen linkage between two benzene rings and a sulphonamide grouping in the para position in one of the rings. Some unknown person had suggested that this constitution might give these drugs a destructive affinity for some microbic protoplasms. Thereupon Domagk had infected animals with a number of pathogenic microbes and had treated them with all the available aniline dyes which possessed this structure. He found that the substances subsequently registered as Prontosil would protect mice against hæmolytic streptococci even if they were given by a different route from that of the infection and after an interval. Both the soluble and insoluble red prontosils had this effect. Tréfouël, Nitti, and Bovet next showed that the Germans were mistaken in thinking the double nitrogen linkage was essential, and that the simpler compound *p*-aminobenzenesulphonamide, which had been known for thirty years, was just as effective. Later workers had found that other substances with the sulphonamide group intact would cure mice. Dr. Colebrook called attention here to the great confusion which has been caused by the use of the term prontosil for the colourless substance *p*-aminobenzenesulphonamide as well as the two red dyestuffs, and by the introduction of many other trade names for *p*-aminobenzenesulphonamide. The term sulphanilamide was a satisfactory abbreviation for this substance and its general use was very desirable.

Then had come the discovery that sulphanilamide had remarkable bactericidal properties which red prontosil had not. These properties were entirely different from those of ordinary antiseptics, for the drug would kill streptococci well in human blood, nearly as well in serum, and very little in water. The blood of treated patients also showed a remarkable increase in its killing power. These drugs, therefore, might possibly act as "internal antiseptics." Red prontosil, which was not itself effective, would also increase the killing power of the blood, but this action developed only after several hours. This late effect had been shown by Dr. A. T. Fuller to be due to the slow conversion of the red prontosil into sulphanilamide in the body.

Both red prontosil and sulphanilamide were extremely diffusible substances, quickly passing into the blood, urine, cerebro-spinal fluid, and milk. This property was perhaps closely bound up with their important therapeutic action. Their toxicity was low. Within the last few months some substances had been described which differed from sulphanilamide and apparently had a stronger curative effect. Among these were Proseptasine, in which one of the hydrogen atoms was replaced by a benzyl radical, and Soluseptasine, and the sulphones, in which there was no sulphonamide grouping. The latest variants of all had been grouped together under the name disulphonamides.

ACTION ON STREPTOCOCCI IN MAN

Dr. Colebrook then described the results obtained at Queen Charlotte's Hospital in puerperal fever, which resulted from the infection of a wound by exactly the same strains of hæmolytic streptococci as caused cellulitis, tonsillitis, scarlet fever, and a number of other conditions. The hospital was fortunate in having figures for a previous period of five years during which no specific treatment had been used. The death-rate had then averaged 22·8 per cent., and during 1935, the latest year, it had been even higher. From the beginning of 1936, when the use of red prontosil had commenced, up to the present time the death-rate had been 5·5 per cent. A total of 65 patients had been treated with the two red prontosils in combination, and about 115 with sulphanilamide, while 20 had received no treatment. Whereas in the old days the temperature had come down and fluctuated for a week or two, sometimes several months, during the last two years it had almost monotonously come down two or three days after admission and treatment with these drugs, and had stayed down. Parametritis, the great bugbear of the puerperal fever wards, had almost completely disappeared.

The important question arose whether these results were really due to the drug. The suggestion had been made that the invasiveness of the streptococcus might have been diminished during this period and that this change would have produced such results. Assuming this change, it had happened suddenly and had coincided with the introduction of prontosil. There were certainly fewer cases with a positive blood culture and the signs of general peritonitis. If, however, the drug was really effective, that was precisely the effect it would produce. In cases where hæmolytic streptococci could be demonstrated in the blood stream, the mortality before the use of the drug had averaged 71 per cent. During the fifteen months following the introduction of prontosil, this figure had fallen to 27·3 per cent. This result suggested that, in spite of the organism being of the invasive class, the drug had exerted an effect. Moreover, patients were now recovering in circumstances which made it almost impossible to reject the drug as a cause. When all this evidence was considered, it was very difficult to doubt the curative value of the drug. Animals were certainly cured, even when they already had septicæmia; and in human streptococcal meningitis, although the recovery rate had formerly been placed at 3 per cent., during the last few months 10 cases had been described in the English and American literature alone in which patients had recovered after the administration of one of these drugs.

(*Continued from previous page*)

the complete exhaustion of all sugar reserves so that the patient needs very frequent absorption of sugar from the stomach if hypoglycæmia is not to result.

I am indebted to Dr. J. G. Porter Phillips, physician-superintendent of Bethlem Royal Hospital, for permission to carry out this treatment and to publish this paper.

Summarising his experiences of sulphanilamide in the treatment of puerperal infections, Dr. Colebrook said that he had not seen good results except in the cases infected by hæmolytic streptococci (he was not referring to urinary infections). The preparation used at Queen Charlotte's during the past year had been that sold as Streptocide. With the dosage employed—usually 3–6 grammes per diem at first and then less—the results had been on the whole very satisfactory as compared with the pre-prontosil period, but not quite so impressive as those obtained with the red prontosils. He did not wish to stress this difference—further experience might reverse it. In animals certainly sulphanilamide was rather more effective than red prontosil. Experience with these new drugs was calling attention to the great difficulty of assessing the value of new remedies and the urgent need for a carefully thought-out procedure for this purpose. The work on prontosil and sulphanilamide at Queen Charlotte's had shown the great value of special units. It was perhaps unique as a small hospital with a comparatively large laboratory equipped for attacking a problem from several sides at once, and manned by workers who could concentrate all their energies on one problem. Quicker progress would be made in many medical problems if more units of this type could be provided.

TOXIC EFFECTS

New drugs nearly always went through a phase in which their toxic effects received too little attention in the medical press, and then through another in which they received too much. These drugs had reached the second phase, and the medical journals were flooded with reports of isolated cases illustrating the toxic effects, without the background of hundreds of cases showing none. The most prominent symptom observed at Queen Charlotte's had been cyanosis, more than half the cases treated with sulphanilamide having shown some degree of it. In the majority, however, it had only been slight. Of 58 cases sulphhæmoglobin alone had been present in 13, methæmoglobin alone in 24, the two together in 8. In 8 cases showing slight cyanosis, neither had been found. In 3 cases only the cyanotic change had been accompanied by an alarming amount of prostration. These patients had all been heavily infected, one with general peritonitis and septicæmia. "Drug fever" had been observed in six or seven cases. About 20 cases had shown a recurrence of fever a few days after the drug had been discontinued. This might have been due to a recrudescence of the illness, although there were no clinical signs of it. On restarting the drug the fever had subsided and convalescence had been normal. Other toxic effects, never serious, had been attributable to the central nervous system—e.g., two cases of a curious type of hysterical fits never before noted in puerperal fever. The hospital psychiatrist had not however been satisfied that they had been due to the drug, and mental symptoms were generally noted in about two cases out of every hundred of puerperal fever. Some patients had complained of headache, slight dizziness, spots in front of the eyes, dimness of vision and paræsthesiæ, and one of diminution of tactile sense. Two patients had had slight jaundice; no anæmia had been observed, but routine blood counts had not been made. There had been no symptoms of agranulocytosis, nor any of the morbilliform rashes recently described in America.

Clinicians must recognise these toxic effects and perhaps conclude that some patients were particularly susceptible. These drugs should not be sold over the counter nor used without medical prescription, nor prescribed as a shot in the dark for infections where the physician had no reason to suspect that they would do good. Nor should they be used casually for obstetrical prophylaxis, but only where there was a particular risk of infection by hæmolytic streptococci. The tolerance of patients in bed seemed to be higher than that of ambulatory patients. It was possible that all the products on the market were not uniform and that different kinds of toxic effects were produced. In conclusion, Dr. Colebrook reminded members of the lesson of 606. As soon as they had realised that it might have some toxic effects, the manufacturers had set to work to produce substances which were less and less toxic and less and less curative. The profession should be on their guard against the same thing happening to sulphanilamide.

RESULTS IN OTHER INFECTIONS

Dr. G. A. H. BUTTLE said that in hæmolytic streptococcal infections sulphanilamide would cure mice of about 10,000 lethal doses. Results in endocarditis, a non-hæmolytic streptococcal infection, had been uniformly poor. Of eight or nine strains of streptococci recovered from endocarditis cases all but one (of the *fæcalis* type) had proved susceptible to sulphanilamide in vitro, but the phagocytic power of these patients was poor, and the blood without leucocytes could not deal with a large number of streptococci. Also, lesions in the heart valves might be inaccessible to the drug. A derivative of sulphone had produced a bactericidal effect in the blood but had not sterilised it. The mouse results had been striking in meningococcal infection. Mice had been cured of a million fatal doses of meningococci by a few doses of sulphanilamide. The result of delayed treatment, however, was not so good. The drug entered the cerebro-spinal fluid in almost as high a concentration as in the blood. Clinical results from America showed nine recoveries and one death. In the fatal case the fluid had been sterile and the death might have been due to toxins produced by the infection. In vitro the gonococcus was just as susceptible as the meningococcus. Of 47 cases treated in America, 36 had been cured in less than five days and only 3 had not responded. The infection had not spread after the beginning of treatment. Crean in THE LANCET of Oct. 16th had reported a recovery rate of 90 per cent. and a shortening of the duration of treatment by half. Good results had also been reported by German workers with Uleron, a new sulphonamide derivative. This seemed especially better in gonorrhœa in the female. Dr. Anwyl-Davies had reported to the Therapeutic Trials Committee that no effect had been observed on the gonococcus; this showed the danger of judging on a few cases.

In typhoid-*coli* infections the mouse results had not been very striking—protection against 10 fatal doses and partial protection against 100. One dose of sulphanilamide was almost as effective as a number. Much better results had been obtained on *B. dysenteriæ* Sonne—as good as on any streptococcal infection. Clinically, the most striking results were in urinary infections by *B. coli* and *B. proteus*. *Streptococcus fæcalis*, however, was quite insusceptible. There was no clinical evidence of the effect on staphylococcal infections. Sulphanilamide would save 80 per cent. of mice from 100 lethal doses of staphylococci, but at the end of 48 days half the recovered animals had septic abscesses, mostly in the liver and peritoneum. Striking clinical results could not be hoped

for. The results, however, with virulent strains were better than those of antitoxic serum. The new drug uleron was said to be better than sulphanilamide in staphylococcal and gas-gangrene infections, though one striking cure of gas-gangrene had been reported with sulphanilamide. Other workers had made a preliminary clinical report on 9 cases of infection by Type III pneumococcus where improvement had been attributable to the drug. Results on Types I and II had been disappointing, but those of a derivative of diamino-diphenyl-sulphone were a little better, recovered mice being immune. A large proportion of mice were saved by sulphanilamide given at the time of the infection and a small dose of serum given 18 hours afterwards. Cases of pneumonia might therefore be given sulphanilamide in the interval before the administration of serum if the typing could not be done at once. The bactericidal effect in the blood in vitro largely depended on the presence of the leucocytes.

Dr. MAURICE MITMAN described clinical trials of proseptasine, a benzyl sulphanilamide, in scarlet fever and erysipelas. These indicated that the drug was easy to give, of low toxicity, strikingly successful in erysipelas, and relatively ineffectual in scarlet fever.

Mr. GEORGE DISCOMBE reported on about 100 cases of complications due to streptococcal infections treated with sulphanilamide, benzyl sulphanilamide, and a few of the soluble preparations of prontosil. No serious toxic effects had been observed. Mild cyanosis, sulphæmoglobinæmia, and methæmoglobinæmia had been noted. Severe hæmoglobinæmia did not appear on low-residue diets and liquid paraffin, and methæmoglobinæmia might be counteracted by methylene-blue. The pigment was completely inert towards oxygen and so had little effect. The worst cyanosis appeared in patients who had recently undergone an operation.

Prof. ARTHUR GREEN, F.R.S., explained the effect of these drugs as possibly due to their differential action on the cells of the microbe and the cells of the host.

Dr. E. P. POULTON summarised an investigation in which the titre of the streptococcal infection in each case was measured by the Guy's Hospital technique of antistreptolysin titration. The conditions were chiefly erysipelas and various forms of rheumatism and rheumatoid arthritis. Prontosil seemed to have some value in the acute stages. Hæmolytic streptococcal infection was more often associated with other diseases than was generally imagined —e.g., abdominal actinomycosis and *B. coli* pyelitis.

Dr. J. C. HOGARTH gave some clinical details of the 355 scarlet fever cases mentioned by Dr. Mitman.

The CHAIRMAN observed that there was no doubt about the potency of these drugs or their permanent place in therapeutics. It was for the profession to discover their limitations and dangers. All the speakers had worked with them from the beginning and had described first-hand research.

MIDLAND MENTAL PATHOLOGICAL SOCIETY.—The seventh general meeting of this society was held at the University of Birmingham on Oct. 28th, with Sir Gilbert Barling, the present, in the chair. Dr. F. A. Pickworth read a paper, entitled a New Outlook on the Physiology and Pathology of Mental and Emotional States, in which he endeavoured to correlate capillary irregularities in the brain with mental disorder in the patient. Dr. P. Bacsich read a paper on rapid and simple methods of demonstrating Nissl substance, myelin sheaths, and nerve-fibres in consecutive sections of the same material.

NORTH-WESTERN TUBERCULOSIS SOCIETY

AT a meeting of this society in Manchester on Oct. 28th Dr. GEORGE JESSEL gave a presidential address on

Radiology at a Tuberculosis Clinic

He began by describing the methods he had employed for the last fifteen years at the Eccles clinic which served an area with a population of about 367,000, containing five dispensaries. He used a single-valve apparatus and gave exposures of one-tenth of a second at four feet. With such an apparatus uniform chest skiagrams of good quality could be produced. Screenings were done only in connexion with artificial pneumothorax refills and were seldom used for diagnosis. By using lateral and oblique positions he could obtain nearly always the desired information in doubtful cases, and preferred this to stereoscopy. He used paper films regularly, and thought them valuable for routine re-examination and artificial pneumothorax refills. The cost of these films was about half that of celluloid films, but he preferred the latter for diagnostic purposes.

It could be argued that radiological methods were necessary only when the physician found ordinary clinical methods insufficient, but where physical signs were absent or slight, valuable time might be lost in an attempt to discover the undiscoverable, and X ray examination would often reveal distinctive shadows when there were no signs. Moreover the regular use of radiography helped a physician to check his physical signs and enabled the course of a case to be followed accurately. Where the interval between pneumothorax refills was one week or longer, screening should be done before each refill, and the appearances recorded on a diagram. Skiagrams should be taken after refills for record purposes every 6–8 weeks, but the intervals could be varied. In 1933 Dr. Jessel had pointed out that failure to use radiography in cases of suspected fracture ranked as negligence, and had suggested that a similar view would soon be taken in cases where there were reasonable grounds for suspecting tuberculosis. This suggestion had been fulfilled by a recent decision of the Court of Appeal in Connolly *v.* Rubra (see *Lancet*, 1937, **1**, 1006).

Radiography might nevertheless be abused and too much reliance might be placed upon it by those who had not troubled to learn or utilise the time-honoured methods of examination. The disadvantages that came from reluctance to use X rays were (1) the longer time usually needed to reach a diagnosis, and (2) the tendency to play for safety and to diagnose non-existent tuberculosis. Radiography was, moreover, particularly useful in the differentiation of chest conditions. On the other hand it could not be relied upon to provide by itself an accurate diagnosis, and often the information it supplied was equivocal; indeed in some respects radiography had tended to make the diagnosis of chest diseases more difficult, and it was still the man behind the gun, and not the gun itself, that counted most.

Some said that X ray examination should only be made by a whole-time radiologist, who would not be biased by clinical knowledge of the case. Nowadays however many radiologists asked to be supplied with information of patients referred to them. Consistently accurate diagnosis of chest diseases depended on assessment of all the available evidence, and there was no a-priori reason why the physician making

the diagnosis should be biased by clinical examination, any more than by radiological findings. A radiologist who had no clinical experience and was not regularly engaged in clinical work had an insecure foundation for his reports. The tuberculosis officer or physician, who was regularly radiographing his own cases, was constantly checking both his clinical findings and the appearances in the skiagrams, and so obtained a good working knowledge of the value of both. In sparsely populated districts it would, of course, be uneconomical to provide an X ray apparatus for each dispensary; but the ideal method was for a member of the tuberculosis medical staff to act as radiologist. A second man should be available as deputy, but it was neither necessary nor desirable for every medical officer to practise radiology. Where an outside radiologist was preferred or had to be employed, the nearer he was to the clinician the better. Where payment was made per capita there was grave risk that, in the effort to secure economy, the amount of radiology would be unduly restricted. In the past thousands of pounds had been wasted by the occupancy of beds for the tuberculous by non-tuberculous cases, and most of this loss could have been avoided by a relatively small expenditure on X ray work. In his own unit the cost per skiagram had been worked out at 9*s*. 6*d*. This included depreciation, based upon an estimated life for the apparatus of ten years, as well as a proportion of the cost of staff salaries, rent, heating, lighting, and cleaning. No credit had been allowed for screenings to the number of 500–600 a year. Granted the existence of an X ray apparatus and suitable staff, the cost of each skiagram fell with an increase in the number taken, but a wise discretion was necessary if the best use was to be made of the time and energy of the staff, having regard to their other duties.

HUNTERIAN SOCIETY

AT a meeting held at Apothecaries' Hall on Nov. 1st, with Mr. D. C. NORRIS, the president, in the chair, this society discussed the position of the

General Practitioner in Midwifery

The proposition before the meeting was "That the general practitioner should not be excluded from the practice of midwifery."

Dame LOUISE MCILROY pointed out one or two reasons why general practitioners were indispensable to a national midwifery service: No one else could be summoned in an emergency, or knew so well the intimate circumstances of the patient or possessed her confidence so completely. No one could so well carry out preventive measures; the family doctor was the first line of defence. She criticised the whole-time service on several grounds. It was uneconomical, she declared, to administer any public service, and it would never be possible to accommodate every parturient woman in hospital. Mass-production methods, moreover, were not suitable for the expectant mothers of the country; they needed individual attention. There was no continuity of supervision between many antenatal clinics and the maternity service: in hospital the mother met a different group of doctors and nurses and had to begin all over again. While the whole-time medical staff were pledged to secrecy, their clerical assistants were not. Any clerk might disclose the admission of a patient for an illegitimate birth or an abortion, and the patient had therefore no feeling of confidence in the hospital. Psychology was nowhere more important than in conditions affecting the reproductive functions; the family doctor was a friend and adviser to whom the mother would tell her intimate anxieties and worries, but this valuable relationship was absent from the whole-time service. It was unfair to say that the general practitioner was incompetent to deal with midwifery practice, and to compare his skill with that of the professor who had an expert staff and modern equipment. The clinic should help the family doctor and make him part of its scheme. One London borough maintained a "flying-squad" which the general practitioner could summon, and allowed him to follow his patients into hospital.

Dr. W. H. F. OXLEY declared that, although he was in charge of a large maternity service, he was and always would be a general practitioner. After an ineffective campaign, lasting ten years, to reduce maternal mortality, most of the administrators and the public had come to the conclusion that the man to be blamed was the general practitioner. Three or four years ago the Minister of Health had appointed two of the higher members of his hierarchy to make a "field investigation" in an area where the mortality had been exceptionally high. They had at length published a beautiful report 350 pages long, written in perfect English and full of statistical tables. The only factor they had been able to incriminate had been the weather. They had therefore immediately taken the line of least resistance and blamed the general practitioner more than he had ever been blamed before, and had recommended that the local authority should be empowered, in consultation with the local medical profession, to see that the best local skill was available for women who required it. This meant that the mother should have only that medical skill which was thought to be best by the medical officer of health and two or three of the local profession, and that the average general practitioner should be prevented from coming to help the midwife. Nothing could be more unfair than that the medical officer of health should be able to take away from a general practitioner his existing right to practise midwifery among the working classes, but this would happen if the Midwives Act, 1936, was the success which all hoped it would be.

SOME FIGURES FOR RECOVERY

The Ministry of Health was one of the greatest sinners in promulgating false statements. One of the worst of these was the figure for maternal mortality, which was exaggerated by 10 or 15 per cent. through the inclusion of abortion deaths. It was 3·81 per 1000, and ought to be 3. The recovery rate was therefore 99·7 per cent. In a condition in which the whole of the woman's metabolism was vitally changed, and which was beset with pitfalls, this was a marvellous figure, and the credit for it was due to the general practitioner. Of the remaining 0·3 per cent., only half, or 0·15 per cent., of cases were considered by the Maternal Mortality Committee to be preventable, and then only when the woman did what she was told, the midwife obeyed her rules, and the general practitioner never made an error and always had a good specialist, ambulance service, and hospital behind him. Given all those conditions, the general practitioners might increase the recovery figure from 99·7 to 99·85 per cent.—a superhuman approach to perfection. Premature use of forceps was extremely rare, but some local authorities quite illegally refused to pay more than 10*s*. for a night and 5*s*. for a day visit if the doctor did not put on forceps. Only if

he did so would they pay the statutory two guineas. Critics of the general practitioner also said that he did not know the treatment for post-partum hæmorrhage. If the regulations of the General Medical Council were followed, he should have attended twenty cases under supervision. If they were not, the fault was that of the teachers, who hardly had the right to say that their pupils did not learn anything. In conclusion, Dr. Oxley pleaded for collaboration, and permission to do midwifery work for those general practitioners who desired to do it; they should also have opportunities of post-graduate instruction, the assistance of a consultant, and entry to antenatal and obstetrical clinics in order to observe modern methods.

Prof. J. M. MUNRO KERR considered that the debate ought to have been held on "The place of the general practitioner in the practice of midwifery." No one would be so foolish as to advocate that the general practitioner should be excluded; on the other hand no one conversant with the matter would be so foolish as not to admit that the changes of recent years called for adjustment. Forty years ago the general practitioner had been responsible for 90 per cent. of all births, but the work had made such inroads on his time that he had delegated most of it to assistants, who then as now had not been trained to do operative midwifery. It was not practicable to give them this training, and that was why the midwifery service needed experts. A great change had started with the Midwives Act, 1902, which had created a body of certified midwives into whose hands the bulk of the domiciliary practice in the large industrial areas had soon passed. Antenatal clinics and municipal hospitals had continued the detachment of the general practitioner from midwifery. Without constant clinical experience no doctor could practise any branch of medicine satisfactorily. The number of practitioners who could be accommodated in the maternity service of any locality was limited. There was not enough obstetrical work to give every local practitioner the continuous practical experience he needed to train himself as an expert. Some local authorities were actually, against the intention of the Ministry, inviting all local practitioners to enlist in the service. Only a limited number of general practitioners did surgery, and the adjustment between general practitioners and surgeons had taken place quietly and without ill-feeling. Obstetrics should be placed on a similar footing, at any rate in large areas, and the simple law of supply and demand would do the rest.

The general practitioner claimed that at all events antenatal work was a medical matter and that he was qualified to undertake it. Unless, however, he undertook intranatal care as well, there would be dual control. He also declared sometimes that he merely wished to assist the midwife if complications developed. Often, however, it was impossible to determine the exact nature and degree of the difficulty until the patient was anæsthetised. Direct contact should be established between the midwife and the expert—the pure specialist or the practitioner who had trained himself in obstetrics after graduation. There should be no middle-man with a working knowledge but little practical experience. A considerable number of general practitioners did not wish to do midwifery practice but might be compelled to do so because others in their locality did not wish to give it up. The public could not have both choice of doctor and experts in obstetrics. Mothers in general would not object to a limitation of choice; well-to-do women and the wives of general practitioners were now nearly all attended by specialists. A new orientation to all medical practice was needed. It was impolitic for the general practitioner to try to perpetuate his position as a jack-of-all-trades. He was the greatest of all specialists. No body of men was held in higher regard, but the best of them were primarily physicians. Moreover, obstetrical specialists had a right to a fair share of practice.

Sir COMYNS BERKELEY thought it would be a catastrophe to eliminate the general practitioner from anything, but insisted that he should be competent. He knew many doctors who had been in practice for many years and were not competent. Teachers did all they could theoretically, but knew quite well that many students at qualification were not competent in the clinical practice of midwifery, although they might be qualified by law to undertake it. Much bad midwifery was done in the country. The general practitioner who intended to practise midwifery should have post-graduate training. Patients with a medical or surgical emergency could nearly always be moved to hospital, or a consultant could be brought quickly. This was not true of midwifery practice, and a newly qualified man might be faced with an emergency more dangerous and difficult than a major surgical operation. He agreed with the requirement of the Ministry of Health that local medical practitioners should form a committee with the local authority and set up a panel. The local profession would then have a discretion of which critics of the plan would deprive them. Finally, he suggested that Dr. Oxley had forgotten the platitude about the stable door.

Dr. KENNETH MCFADYEAN said that if his diploma, given him by the hands of Sir Comyns Berkeley, was rubbish, what about the qualifications of his teachers? In twenty years' practice he had had only one death and had only called in a consultant in seven cases, in five of which the consultant had been wrong, and in none of which he had done anything. Dr. McFadyean had delivered his own three children. Only once had he put forceps on with an undilated cervix, and that had been on the advice of one of the most eminent obstetricians of the day. The general practitioner was probably well taught and conducted his confinements with remarkable success.

The PRESIDENT recalled that he had once seen in the East End a shop shared by a dentist and a midwife, who had placed between the inscriptions of their names a sign "Painless Extractions." He held this out as a symbol of a desirable spirit of collaboration.

SOCIETY OF PHYSIOTHERAPISTS. — The annual general meeting of this society, which incorporates the Association of Registered Biophysical Assistants, was held at the Langham Hotel, London, on Saturday last. The chairman said that the establishment of the Board of Registration of Medical Auxiliaries had been a valuable step in safeguarding the future professional interests of medical auxiliaries. They must, however, be united into one association; lack of such unity in the past was largely responsible for "the unqualified practice which is rife to-day and which has done so much to bring physiotherapy into disrepute." Mr. A. M. A. Moore, assistant surgeon to the London Hospital, expressed his strong approval of the National Register of Medical Auxiliary Services. "If I were asked," he said, "what I considered to be the chief rôle of the medical auxiliary, I would say the restoration of confidence in the patient." The physiotherapist coöperating with the doctor could do much, for example, in the re-education of an injured limb, and there were now many forms of physiotherapy all of which, if appropriately administered, could be of great value to the patient.

REVIEWS AND NOTICES OF BOOKS

Lumley's Public Health

Eleventh edition. By Sir JOSHUA SCHOLEFIELD, K.C., one of His Majesty's counsel of the Inner Temple; ERSKINE SIMES, M.A., Barrister-at-Law of the Inner Temple; CHARLES E. SCHOLEFIELD, Barrister-at-Law of Lincoln's Inn; and A. N. C. SHELLEY, M.A., B.Chir., Barrister-at-Law. London: Butterworth and Co., and Shaw and Sons. 1937. To be published in 4 vols., £16 16*s*. Vol. I. Pp. 1299.

THE enactment of the Public Health Act, 1936, set a puzzling problem to the editors and publishers of Lumley's Public Health Acts. The new statute largely repealed and replaced the principal Act of 1875 and its successors with effect from Oct. 1st, 1937. The immediate task was to produce before that date a new edition containing an annotated text of the new law. This first step has been taken. A few weeks ago there appeared a heavy volume comprising not only the Public Health Act of 1936, but also (to explain the constitution and functions of health authorities) the Local Government Act of 1933. But what is the next step? Parliament did not make a clean sweep in 1936 when it pulled down and rebuilt a large part of public health legislation. Much of the old 1875 fabric remains standing. Yet it would be waste of time to republish it in the new Lumley because this residuum will presently disappear. The Ministry of Health has exemplary intentions and excellent architects. The plans for completing the reconstruction of the law are in the pigeon-holes, though nobody can safely prophesy when the work will be done or what it will look like. Meanwhile additional improvements are altering the outline of the 1936 design. As recently as last July there was fresh legislation on public health in respect of factories, of the drainage of trade premises, and of hydrogen cyanide fumigation. The publishers of the new Lumley had to go to press before these latest developments had taken shape. Even without these their book is big enough. It is put forward as "Volume I" of a new edition; we are promised three more volumes some day, though we cannot be told what the volumes will contain—only that the prospective set of four will cost the formidable price of sixteen guineas. We cannot expect that substantial publications of this nature will be cheap. We have no doubts either of the perseverance of the learned editors or of the good faith of the publishers. The promised books will appear. They will qualify us to discharge the duties of good citizenship. We must resist the temptation to say, as the chief captain said to St. Paul, "with a great sum obtained I this freedom."

The editors of this first volume have unquestionable qualifications. The captain of the team, Sir Joshua Scholefield, K.C., has been associated with four previous editions. His labours this time were probably the hardest. The 1933 and 1936 Acts were not pure consolidation; they contained an important but inconspicuous element of amendment. All the old decisions had to be reconsidered. As an instance of the resultant difficulty we find the editors repeating a string of references to cases on tenure of office and the power to dismiss officers at pleasure, leading up to Brown *v.* Dagenham U.D.C. But they have to warn us that these cases were side-tracked by Section 121 of the 1933 Act. Their work is faithfully done. In ten or twenty years' time, when the legislative structure is really complete, the transitional lay-out of the new Lumley may be replaced by something more definitely planned. But, if the time ever comes when the law is clearly and finally rewritten, Parliament will at once begin to alter it all again. It is a depressing thought.

Verzögerte Knochenbruchheilung und Pseudarthrosenbildung

By Prof. Dr. GEORG BRANDT, Vorstand der chirurgischen Klinik des Städtischen Krankenhaus, Mainz. Leipzig: Georg Thieme. 1937. Pp. 175. R.M.14.80.

THIS book begins with an informative study of the biology of bone formation leading to a discussion of congenital non-development and non-union. In these allied conditions it is extremely difficult to secure union, but the author is able to quote cases in which it has been achieved. In the section on causation, he points out that constitutional conditions like rickets, old age, and endocrine defects, though they may make the bones brittle, by no means exclude union of a fracture, nor does sepsis of the milder grades, though with vitamin deficiency or overdosage it is a common cause of delayed union. In an analysis of the mechanical factors leading to non-union in each of the long bones in turn, Prof. Brandt suggests that the commonest single cause of non-union is unphysiological stress at the site of fracture, and gives convincing case-records and radiograms to prove his point. He explains the existence of two opposing schools of treatment—early movement *versus* prolonged and complete fixation—by the thesis that physiological stresses on the fracture from muscles acting in a normal axis are helpful, and that shearing or rotary forces delay, if they do not entirely prevent, bony union. This seems a reasonable explanation, and supports the plea for a most accurately moulded plaster-splint. In regard to splinting, the author approves the unpadded Böhler plaster for routine work, but recognises its dangers in operations likely to be followed by much swelling, for which he recommends a wool padding carefully applied. In pleading for fixation adequate in extent as well as in duration of application, Prof. Brandt shows how injurious is any attempt to move stiff joints in the neighbourhood of soft callus, which tends to yield before the joint adhesions do. Another factor, discussed at length, is the tensile effect of a bone running beside the injured one and itself unbroken, or early united without shortening. A number of cases are quoted where mere division and shortening of such a bone has led to union of its neighbour, even though muscle appeared to have supervened between the ends of the latter. In Prof. Brandt's view the intervention of soft tissue between the bone ends need not inevitably cause non-union, and he points to myositis ossificans as evidence that bone cells can make their way through muscle. He also quotes cases where osteotomy of the injured bone, away from the seat of fracture, with the aim of reducing mechanical stresses has led to union at the original fracture; and he reminds us that mere rawing of bone ends, without subsequent splinting, seldom leads to union. He gives repeated warning, both in the text and illustrations, of the futility of depending on local fixation alone, whether by bone plate, screw, or autogenous graft, and also reminds us that the femur is not a bone suited to plaster treatment in the early stages, but that it requires traction over a long period, and for this he recommends Kirschner wire. For the treatment of bone infection the author advocates the same fixation and treat-

ment without dressings which is successful in spontaneous osteomyelitis. He also approves the bridged plaster (which those who follow the technique of Winnett-Orr find unnecessary and seldom satisfactory) and the use of windows for an occasional dressing of the wound, but does not refer to the admirable open-air treatment of Böhler with protection by a wire cage, which results in the rapid drying up even of sodden wounds.

This important book is generously illustrated. It contains no startling new discoveries as to the causation or treatment of non-union of fractures, but the subject is fairly and thoroughly discussed, throwing new light on it from some unusual angles, while it also provides a summary of a mass of Teutonic literature. Even the scientific world seems to suffer in these days from excessive nationalism, for in spite of international societies and journals, too many workers in every country are evidently only familiar with articles written in their own language.

Synopsis of Obstetrics and Gynæcology

Seventh edition. By ALECK W. BOURNE, M.A., M.B., B.Ch., F.R.C.S., F.C.O.G., Consulting Obstetric Surgeon, Queen Charlotte's Hospital, London; Obstetric Surgeon, St. Mary's Hospital, London. Bristol: John Wright and Sons; London: Simpkin Marshall. 1937. Pp. 452. 15*s*.

THROUGHOUT this book in spite of its modest title the information given is full enough to enable the reader to get a clear idea of how to undertake the care of a patient. It is therefore deservedly popular with practitioners as well as with students reading for examinations. The subject matter is sound and the omissions negligible. In this edition the author has included details of the use of Prontosil and of mandelic acid, and the sections that deal with endocrinology are brought up to date. The chapter on the management of labour in a minor degree of pelvic contraction is specially good. It contains practical advice, obviously the outcome of a wide experience; in many larger text-books the pupil receives instructions that are neither so lucid nor so precise. There is every reason to believe that this volume will continue to be extensively used for quick reference or revision.

Failure of the Heart and Circulation

By TERENCE EAST, M.A., D.M., F.R.C.P., Physician, King's College Hospital and Woolwich Memorial Hospital. London: John Bale, Sons and Curnow. 1937. Pp. 130. 2*s*. 6*d*.

OUR conception of what happens in the circulation when the heart fails, and of what can be done to prevent or relieve failure in its various forms, has altered radically during the working life of the senior practitioners. It is therefore by no means an easy task to explain this complex process in terms which will appeal to the doctor as well as to the modern student. In this little book Dr. East has sought mainly to elucidate the signs met with at the stages when successful treatment is still possible, and especially to show how they can be detected at the bedside without special apparatus. Thus the histamine and sodium cyanide tests for the rate of blood flow and the estimation of raised venous pressure by the filling of the veins in the neck are described in detail, while electrocardiography is scarcely mentioned. Those who want to study the author's views on the supplementary information to be obtained from electrocardiography can do so in his joint contribution to Messrs. J. and A. Churchill's Recent Advances Series.[1]

The early evidences of failure of the left ventricle—dyspnœa, persistently raised pulse-rate, gallop rhythm, slowed pulmonary circulation, and alternation of the pulse—are clearly differentiated from those of failure of the right—enlargement and tenderness of the liver, œdema, cyanosis, and evidence of enlargement of the right auricle. There are chapters on the special problems associated with thyrotoxicosis and pregnancy; heart failure is not, according to Dr. East, to be regarded as an indication for the induction of abortion. Treatment of heart failure in general is discussed in detail, with tables of diets suitable for early and advanced cases, and a scheme of massage and exercises for use in after-treatment. In the section on prognosis the author insists upon the importance of turning a cheerful face to the patient, if not to his friends, and notes encouragingly that in this condition the response to treatment is often a pleasant surprise even to the medical attendant. The larger the heart the worse the outlook, however, and a persisting pulsus alternans, gallop rhythm, or œdema must always be grave signs. Though much of the information provided in this slim volume is necessarily sketchy, a few hours given to its perusal is likely to clarify the ideas of all but experts on a common condition often mismanaged.

Scientific Basis of Physical Education

By F. W. W. GRIFFIN, M.A., M.D., Ch.B., Medical Adviser to the Incorporated Lucas-Tooth Boy's Training Fund; Editor, C.S.M.M.G. London: Humphrey Milford, Oxford University Press. 1937. Pp. 203. 7*s*. 6*d*.

THIS little book provides in simple language a summary of recent pronouncements on every phase of human physical activity. The author points out that physical exercise involves the activity of many complex mechanisms, and that failure to understand them completely has injured some persons by strain, and failed to enhance the vitality of others. Although Ling, in devising his system, made a careful study of the scientific knowledge then available, progress since his day in the sciences of anatomy, dynamics of movement, and psychology have provided us with facts that revolutionise our conception of bodily movement. It is these facts which are here analysed and assessed. Dr. Griffin does not regard the problem of providing suitable physical training for all classes a simple one, and he pleads repeatedly for organised and coördinated research by gymnasts, medical practitioners, and administrators. It is to be hoped that in the allocation of Government grants the need for further systematic research on a large scale will not be overlooked.

The chapters deal with the structure, chemistry, and mechanics of muscle (including the difficult question of muscle tone), respiration (including tests for respiratory efficiency), and the effects of exercise on the heart and circulatory system. The nervous and psychological factors in muscular action are fully discussed. In the chapters on bodily posture no reference is made to the pioneer work of Goldthwait of Boston and his classification of physical types. This is especially unfortunate, because Dr. Griffin's classification of types seems to be based entirely on outside appearances, and it savours more of the ill-defined "humours" of medieval writers

[1] Recent Advances in Cardiology. Third edition. By Terence East, M.A., D.M., F.R.C.P., physician, King's College Hospital; and Curtis Bain, *M.C.*, D.M., M.R.C.P., physician, Harrogate General Hospital. London: J. and A. Churchill. 1936. Pp. 350. 12*s*. 6*d*.

than of the well-ascertained facts recorded in the earlier chapters. The few diagrams are clear and useful.

The little book should do much to forward its author's aim of making such knowledge as we have more widespread.

A Surgeon's Pocket Book

Second edition. By H. S. SOUTTAR, D.M., M.Ch. Oxon., F.R.C.S. Eng., Surgeon to the London Hospital. London: William Heinemann. 1937. Pp. 285. 7*s.* 6*d.*

THE title of this manual is ambiguous; we doubt if any surgeon will take it about with him for reference; but as a "refresher" to be carried in the pocket and read at odd moments it can be thoroughly commended to the undergraduate. It is a true pocket book in size and weight. This new edition has been improved by the inclusion of some of the plates from the author's larger text-book, the "Art of Surgery."

Pathology of High Altitude Climate

With Contributions to the Climatology of Highland Regions and to the Constitution of High Altitude Inhabitants. By A. LOEWY, late Professor of the University, Berlin; and E. WITTKOWER, M.D. Berlin, L.R.C.P. & S. Edin., formerly Lecturer of the University, Berlin, and Halley Stewart Research Fellow of the University of London. London: Humphrey Milford, Oxford University Press. 1937. Pp. 212. 12*s.* 6*d.*

THE pathological processes associated with reduced barometric pressure are receiving so much attention from so many angles that a review of present knowledge is a labour-saving device of some importance. Dr. Loewy, the former director of the Swiss High Altitude Research Institute, and Dr. Wittkower, who worked there with him, have obviously brought to the production of their book a considerable knowledge and a gigantic industry, which must receive recognition even by those—and there will be some—who are troubled by their stilted phraseology.

Beginning with a section on the peculiarities of the climate of high altitudes, in which is discussed every meteorological variation from barometric pressure to dust and electrical phenomena, they continue with one on the effect of high altitudes on the constitution of the inhabitants. The meteorologist may find the first section somewhat superficial, but the second section in spite of occasional obscurities and inaccuracies covers its ground admirably. It is doubtful whether the authors really mean what they say in the sentence "whereas normally the temperature varies in proportion to the intensity of solar radiation, it is inversely proportional to it on ascending to high altitudes, decreasing with increasing altitude." Himalayan climbers would hardly agree that 13,500 feet is "the limit of rarefaction of the air that can be endured without complaint." In a formidable list of references we can find no source for the information that the alveolar oxygen pressure at 23,300 feet is 40 mm.; nor for the categorical statement that a change of function occurs in the suprarenal glands at altitudes still greater than those in the Alps. In discussing longevity, the authors conclude that this is greater at great altitudes, but make no mention of the evidence to the contrary to be found in Tibet.

A third section dealing with the diseases occurring in high altitude countries might well have been omitted. In such a book there is very little value in generalities about measles, for example; and the reader experiences a sense of relief at the information that "this is not the place to consider the nature and pathogenesis of rheumatic diseases." What *is* said, moreover, suggests that not only is this not the place but that these are not the authors. The space occupied with such superficialities might well have been devoted to a fuller discussion of specific mountain diseases. The description of symptoms suffered by members of the second Everest Expedition (the only one mentioned) is inaccurate and even misleading. In discussing heat loss the authors give the figures of Diringshofen but make no mention of the later work of B. H. C. Matthews. Further sections deal painstakingly with the mortality in individual highland regions, transitional diseases, and the curative effects of mountain climate; but by this time the authors are beginning to flag and only a page and a half is given to "a few conditions which not infrequently occur on ascending to higher altitudes."

Drs. Loewy and Wittkower are to be congratulated on the production of a book which, in spite of certain sins of omission and commission, is a source of much information not easily available.

Microtomist's Vade-mecum

By ARTHUR BOLLES LEE. Tenth edition. Edited by J. B. GATENBY, M.A. Dubl., D.Phil. Oxon., D.Sc. Lond., Professor of Zoology and Comparative Anatomy, Trinity College, Dublin; and T. S. PAINTER, A.B. Raonoke, A.M., Ph.D. Yale, Professor of Zoology, Texas University. London: J. and A. Churchill. 1937. Pp. 784. 30*s.*

SINCE its first publication in 1885 the Vade-mecum has been a classic, used and loved by thousands of histologists. It has been used because it gave such goodly instruction in the art and craft of cutting and staining sections, and it was loved for the kindly personality which looked out from the pages. There was too something attractively mysterious in the fact that hardly anyone in England had ever seen Arthur Bolles Lee, and that he seemed to have no attachment to any academic institution. He was indeed one of the shining Victorian amateurs, and after a childhood near Alton and a young manhood in Foxe's house at Waltham Abbey he spent the rest of his life as an independent gentleman in Switzerland, coming to public notice only in the seven successive editions of his book. It is therefore particularly pleasing to find a portrait of him in the present edition which shows just the kind of amiable face that the reader would expect; we could wish however that Prof. Gatenby had given rather more details of his life than he has included in his preface. Every new edition of the Vade-mecum has omitted much and added much, and this tenth edition is quite different from the ninth in many ways; the most notable addition is a section on plant technique and a number of those who collaborated in special chapters have given place to others; small changes are scattered all through. But some of the old still remains—e.g., the recommendation that those in want of a paraffin oven should consult the price lists of Jung and Grübler and Hollborn. The individuality of the book has gone and it now inspires more admiration than affection; that was inevitable, but its latest incarnation will be as indispensable to the microtomist as its predecessors. Happiest is he who has a complete set of the series, for the older editions contain much of interest that has had to give room to new methods, and it is only in the fourth that one may read the cautionary tale of the friend who golgified a potato.

THE LANCET

LONDON: SATURDAY, NOVEMBER 6, 1937

THE CAUSE OF EPIDEMIC DROPSY

EPIDEMIC dropsy is an ill-defined disease that closely resembles the wet form of beri-beri but differs from it in the presence of gastro-intestinal irritation, a peculiar mottling of the skin, and hæmorrhages from mucous surfaces, and in the absence of peripheral neuritis and the characteristic deep hyperæsthesia of the calf muscles. It is almost confined to the provinces of Bengal, Assam, Bihar, and Orissa in India, and to emigrants from those areas. It was first recognised in Calcutta in 1877, since when epidemics have been fairly frequent, and it was the recorded cause of deaths in that city in every year from 1905 to 1931. Its causation has given rise to much speculation, but of late years general support has been given to the three theories which ascribe the disease either to contact infection with a specific intestinal organism, to the effects of ingested mustard oil containing some poisonous substance, or to "diseased" rice. Of these the last is the theory that at present holds the field and is the basis of administrative action. According to this rice theory, which was suggested by ACTON and CHOPRA [1] in 1925, toxins are produced in stored rice by the action of organisms of the *Bacillus vulgatus* group. CHOPRA and BOSE [2] have shown that such organisms are capable of elaborating a toxin resembling histamine in its powerful action upon capillaries, and KIRWAN [3] has actually isolated histamine from the fluid of epidemic dropsy glaucoma.

Strong support for the mustard oil theory has now been provided by the investigations of LAL, ROY, and GHOSAL [4] of the All-India Institute of Hygiene and Public Health at Calcutta. Between February, 1935, and April, 1936, they made a house-to-house inquiry into outbreaks in seven different centres. They found that the disease affected mainly middle-class adults, especially Bengalis and those following their dietetic habits. Those who habitually drank the water in which their rice was boiled were less liable to be affected than those who did not, and there was no evidence that those affected had obtained their rice from a common source or that their rice showed a higher proportion of opacities (which are usually assumed to be signs of infection) than that of the general community. Laboratory investigations into the infection of rice grains showed that Gram-positive spore-bearing proteolytic bacilli could be isolated from both opaque and non-opaque grains but that no growth was obtained from the interior of either if their surface was first disinfected with corrosive sublimate. Attempts at producing opacities in healthy grains by infecting them with the *Bacillus vulgatus* failed; and finally typical "diseased" opacities were found in samples of rice collected from areas where epidemic dropsy is unknown. All this evidence was negative, and so was the observation that the incidence was highest in those families that were least congested—the reverse of what would be expected with a contagious disease. Now, however, we come to the positive findings. The Bengalis, who were most susceptible, are the main consumers of mustard oil, and it was found first that there were no cases among non-consumers of that oil and secondly that the incidence increased with the amount of oil consumed. Experiments were undertaken among volunteer convicts in Calcutta jails and in one of them all the six persons who were given "suspected" mustard oil developed characteristic symptoms after from 5–6 days, while the controls remained healthy.

This work therefore supports the view that the disease is due to some substance, probably a chemical poison, occurring in certain consignments of mustard oil. Its nature and origin and a test which can be used to demonstrate its presence remain to be discovered. In the meantime, it should be possible in future epidemics to incriminate a particular batch of oil and, by withdrawing it from sale, to limit the spread of the disease.

[1] Acton, H. W., and Chopra, R. N., *Indian med. Gaz.* 1925, **60**, 1.
[2] Chopra, R. N., and Bose, S. C., *Ibid*, 1933, **68**, 605.
[3] Kirwan, E. W. O'G., *Ibid*, 1935, **70**, 485.
[4] Lal, R. B., Roy, S. C., and Ghosal, S. C., *Indian J. med. Res.* 1937, **25**, 163.

SANS PEUR ET SANS REPROCHE

FAITH, hope, and charity would encourage the idea that, if a medical man does an honest day's work and endeavours to practise the simpler virtues, he may expect to live his life without fear and without reproach. As for reproaches, there is no certainty of reputation till death applies the benevolent rule of *nil nisi bonum*. As for fears, experience unhappily indicates that the conscientious practitioner is optimistic indeed if he trusts to be immune from anxieties alike unwelcome and undeserved. In a recent report [1] of one of the medical defence societies the solicitors definitely state that there is no justification whatever for the majority of claims made against members of the society. In 21 cases a claim or counterclaim alleging negligence was ultimately abandoned: in only one case where such a claim was fought out in court did the complainant succeed. Is there any vocation which, to the same extent as the medical profession, is made the target of unjustifiable and speculative litigation? If a barrister should make a mistake, a convenient rule of law forbids him to be sued. Other professions, if not protected in so absolute and enviable a manner, seem somehow to escape the threats of what might

[1] Presented to the annual general meeting of the Medical Defence Union on Oct. 28th.

almost be called the blackmail of legal process. If the surgeon or physician be negligent, it is reasonable that he should pay compensation for any lapse from the standard which he professes. But if, on a reasonable examination of the facts, he has not been at fault, is it fair that medical men should, beyond all others, be distracted by having to devote time and money to repel attacks which should never have been made?

The solicitors to the society already mentioned summarise a few typical cases. Doctors are often called upon to examine a claimant on behalf either of his employers or of an insurance company. Honest claims are doubtless the general rule. Where, by way of exception, a man exaggerates his symptoms, he faces the examining doctor in a spirit of hostility; if the claim be unjustified, he seeks to discredit the examiner. Thus one claimant alleged that the doctor made defamatory statements about his moral character. Another said that the doctor removed a chair as he was about to sit down, causing him to fall and sustain serious spinal injuries. A third, a woman, complained that the doctor had torn her clothes and twisted her arm. After the defence society's solicitors had investigated the facts and resisted the claims, the complainant took no action in any of these instances. In the third the doctor's emphatic denial was supported by the complainant's own medical attendant who was present at the examination; the disclosure of this fact to the woman's solicitors did not at first stop the threat of legal proceedings, though finally the claim was dropped. Trivial as these incidents may be, each one must have caused anxiety. There are few persons who enjoy litigation, even when it is successful. A professional man does not welcome this kind of publicity.

If medical men have a genuine grievance in this respect, where may we look for a remedy? We can scarcely ask legal practitioners for a more sympathetic treatment. Solicitors, as officers of the Supreme Court, will be alert to see that the machinery of justice is not abused; but they are bound to do their best for their clients and it is human nature to begin by claiming the maximum. There is existing procedure for insisting upon security for costs in vexatious actions; but plaintiffs are often impecunious and no system of stipulating for a substantial deposit seems likely to be favoured. There is little hope that Parliament would extend to general medical practice the prima-facie protection given by Section 330 of the Lunacy Act to those who certify a mental patient. Another valuable precedent is the Reference Tribunal which inquires into irregularities in the prescription and supply of dangerous drugs by medical practitioners. This, again, is unlikely to be developed in the direction of conferring an ampler jurisdiction on the profession where allegations are made against its members. If all such avenues are closed, it should not pass the wit of man to right a wrong. It is wrong that the doctor whose practice is above reproach should not be enabled to practise without fear.

FRACTURES IN THE ANTERIOR FOSSA

ONE of the most dangerous lesions arising from injury to the skull is a fracture of the cribriform plate; for it is usually associated with a tear of the overlying dura mater. The reason for this is that the inner periosteum of the plate is the thinnest part of the dura and is firmly anchored by its extensions through the bone along the olfactory nerves. It is remarkable how the dura may remain intact beneath extensive fractures of the vault of the skull, but in this part of the base it will be torn by a fracture caused by quite a small force. When this happens there is usually a discharge of cerebro-spinal fluid from the nose, and a serious risk of intracranial infection. Discussing these injuries Prof. HUGH CAIRNS [1] divides them into three groups —those in which cerebro-spinal rhinorrhœa comes on in the acute stage of a head injury, those in which it comes on as a delayed complication, and those in which it is produced during intranasal operation. He describes a number of cases in detail, including three fatal cases and two with early cerebro-spinal rhinorrhœa which recovered without operation. These two cases show that, in compound fractures of this region, urgent surgical treatment is not always required in order to prevent intracranial infection in the acute stage. Mr. CAIRNS says of this group that greater accuracy of radiographic diagnosis is necessary and that, if fractures of the anterior fossa can be adequately displayed, the case for surgical intervention in the acute stage becomes much stronger than it has hitherto been. In the presence of old sinus infection operation should be done at once if the patient is seen immediately after the accident.

In the second group 3 cases are described. One patient died from cerebral abscess and meningitis which came on suddenly two years after the injury, and which was due to recent infection of the paranasal sinuses. Another developed meningitis and intracranial aerocele following a cold three years after a fracture of the frontal sinus; he recovered after the sinus had been opened and drained. The third had a fractured base, three months after which a frontal aerocele and cerebro-spinal rhinorrhœa developed. A bone-flap was turned outwards in the frontal region and a tear in the dura mater found over the lower part of the frontal sinus; this was sutured and the patient had an uninterrupted convalescence. In this type of case, unlike those of the first group, there can be no justification for delay; for a cerebro-spinal fistula, such as this case presented, must always be a great source of danger. Here the tear was a small one and easily sutured; when it is large a fascia-lata graft may be employed.

Lastly Mr. CAIRNS reports 2 cases of death from meningitis following injury during intranasal operations. Such an accident may happen during operation by the most experienced rhinologists, for the bone is apt to be extremely thin and brittle in patients with chronic sinusitis. There was

[1] *J. Laryng.* September, 1937, p. 589.

an escape of cerebro-spinal fluid, in one case during operation and in the other a few hours later. In face of this emergency Mr. CAIRNS suggests that the upper aspect of the cribriform plate should be exposed by an immediate transfrontal operation and the tear in the dura closed by suture or by a graft of fascia lata. He concludes that in fractures of the frontal sinus and cribriform plate there is serious risk of intracranial infection, not only immediately but also later when any new infection of the nasal passages may break through barriers weakened by previous injury. The indications for urgent surgical intervention are clear in cases of injury to the dura during intranasal operation, and in cases of delayed cerebro-spinal rhinorrhœa and aerocele following trauma. In the acute stage of such injuries the desirability of immediate operation has not yet been fully established, and greater accuracy of diagnosis of the site of injury is necessary before immediate operation, with its risk of aggravating the shock already present, can be justified.

ANNOTATIONS

ABYSSINIAN REFUGEES IN KENYA

THE arrival of nearly 8000 Abyssinian refugees in Kenya has thrown a strain upon the medical department of the colony. A large number of these unfortunate people had made long treks and were in a miserable, famine-stricken condition. There were many women and children, including young infants, among the refugees and the area into which they had migrated was an almost waterless desert. The geographical position made transport and supply extremely difficult. The medical men hurried to the district found that some of the parties were suffering from small-pox, others had enteric, and there were many cases of febrile illness which could only at the time be diagnosed as P.U.O. Dysentery was almost universal and nearly every immigrant was infested with lice. The immediate necessities of food and water were supplied and the vaccination and delousing of the refugees were undertaken. At the earliest opportunity a concentration camp has been developed with adequate water-supply and facilities for the transport of food. The medical staff is supported by sanitary officers and a large number of trained African hospital orderlies, and accommodation for 200–300 patients in hospital has been provided. The difficulties in arranging a satisfactory sanitary system for such a horde of primitive people are evident, and the progress of the concentration camp will be watched with interest. It may be mentioned that this camp is the largest centre of population in Kenya with the exception of its two chief towns, Nairobi and Mombasa.

A NEW REMEDY FOR KALA-AZAR

THE evolution of organic compounds of antimony proceeds apace: fresh combinations are continually being prepared and tested in the hope of finding one less toxic and more effective than the last. The *Chinese Medical Journal* for September contains a symposium on the latest candidate, Solustibosan (S.D.T. 561), which forms a stable clear colourless solution of pentavalent antimony hexonate. Struthers and Lin [1] of Tsinan, writing on the clinical application, state that the doses are comparable to those of Neostibosan; 2 c.cm. of solustibosan is approximately equal to 0·1 g. of neostibosan, which contains 42 mg. of antimony. On the first day 2 c.cm. was given and afterwards 6 c.cm. on alternate days. Injections are usually given intravenously, although the drug is isotonic and may be administered intramuscularly as well. Between January, 1936, and March, 1937, 29 patients were treated and though conclusions can only be tentative it seemed clear that solustibosan will cure kala-azar in the great majority of cases. They conclude that it has comparatively low toxicity, and its stability on exposure to air is an advantage. Yates [2] who has treated 82 cases at the Hope Hospital, Hwai Yuan, has nothing but good to say about it, but points out that the globulin test remains positive for some months after cure. H. Weese [3] of the I.G. Farbenindustrie, Elberfeld, says that a mouse survives after subcutaneous injection of 43 c.cm. (860 mg. stibium) per kg. weight (i.e., nearly 5 per cent. of the total body-weight) which means that the mouse tolerates 25 per cent. more antimony in the form of solustibosan than of neostibosan. Finally Kikuth and Schmidt [4] contribute to this collection of papers an interesting historical account of the discovery of this new and efficient compound.

[1] Struthers, E. B., and Lin, L. C., *Chin. med. J.* September, 1937, p. 335.

HEALTH UNDER THE "EL"

AN account of a localised health campaign inaugurated in 1932 as part of an important movement in New York State financed by the Milbank Memorial Fund has topical interest. The object of the movement was "to demonstrate by coöperation with three typical communities embracing a population of half a million people, whether, by intensive application of known health measures the extent of sickness in the United States can be further and materially diminished and mortality-rates further and substantially reduced, and whether or not such practical results can be achieved in a relatively short period of time and at a per capita cost which communities will willingly bear." The three communities selected were Cattaraugus County, a rural area, Syracuse, a medium-sized city, and the Bellevue-Yorkville district of New York, a typical American metropolitan area. In the two former areas the demonstrations began in 1923, and an excellent description of the work carried on in each has already been given by Dr. C. E. A. Winslow in books entitled "Health on the Farm and in the Village" (1931) and "A City Set on a Hill" (1934). Since the Bellevue-Yorkville demonstration required longer preparation it was not begun till 1926; its varied activities are now described by Dr. Winslow and Mr. S. Zimand.[5]

For the benefit of the reader who knows not New York it may be explained that the "El" is the elevated railway, and that the Bellevue-Yorkville district lies under the shadow of the lines of the "El" that run above Fourth and Third Avenues on the east side of the city. The chief objects of the demonstration were to interest the district in the

[2] Yates, T. M., *Ibid*, p. 339.
[3] Weese, H., *Ibid*, p. 421.
[4] Kikuth, W., and Schmidt, H., *Ibid*, p. 425.
[5] Health under the El. By C. E. A. Winslow and S. Zimand. New York and London: Harper and Brothers. 1937. Pp. 203. $2.25.

improvement of its health, and to apply to it the known facts of the prevention of disease. The work was carried out under the leadership of the city health department, the central idea being to supplement existing agencies. It was based on a health centre, a five-storied building in East Thirty-eighth-street with an adjacent empty space, which was converted into a playground. To this building, we are told, came hundreds of men, women, and children—"seeking not only relief from illness, but also the precious knowledge of how such contingencies could be prevented in the future." The centre provided an infant welfare centre; clinics for tuberculosis, dental care, child guidance, pre-school hygiene, vocational guidance, and social hygiene; health lectures illustrated by films, and many forms of recreational activity. From it radiated a varied health propaganda (including an extensive and highly successful campaign for diphtheria immunisation), health visiting, and school hygiene services. Close coöperation was maintained with the hospitals and other health and social service agencies of the district. The success of the centre, on which the Milbank Memorial Fund spent $900,000 in seven years, was so outstanding that in 1934 it was taken over by the city health department. Mr. LaGuardia, mayor of New York, in a foreword to this book, says that what was tried out with success in one district is now being extended to the whole city, and that the centre has become the basis of the health programme. Nine new centres are now under construction or just finished, and at least seven additional centres are to be established. The chief moving spirit in this enterprise seems to have been Mr. John A. Kingsbury, who was secretary of the Milbank Fund during the inception and working of the demonstration; to his devoted labours the facts set out here afford eloquent testimony.

MECHANICAL RESUSCITATION OF THE NEW-BORN

RESUSCITATION of the new-born baby is more often required now that childbirth is more often conducted with the aid of narcotic drugs. This at any rate is the opinion of Martinez [1] and he has been searching for some satisfactory way of reviving the narcotised infant. Since 1934 he has been using an apparatus called the "E. and J. Resuscitator" and he now describes its effects upon 500 babies. This apparatus exerts positive and negative pressure through a mask that fitted over the baby's face like the kind of mask used in giving gas. It is equipped with two cylinders, one with oxygen and the other a mixture of 90 per cent. oxygen and 10 per cent. carbon dioxide. The mechanism is activated by pressure from the oxygen cylinder and it is controlled to give a positive pressure of 13 mm. of mercury and a negative pressure of 9·75 mm. of mercury in continually alternating sequence. The change from positive pressure to negative and vice versa is brought about by a device controlled by the pressure within the patient's lungs and the whole apparatus is therefore automatically controlled once respiration has been established by the respiratory efforts of the baby. Martinez emphasises a very important point, which applies whatever method of resuscitation is used—namely, that mucus must be removed from the respiratory apparatus of the baby before any kind of artificial respiration is employed. He is in favour of using pure oxygen until respiration is well established and this is in keeping with modern views on the carbon-dioxide content of the blood in the new-born baby. Of his 500 babies over half responded to a few minutes' use of the resuscitator and in only 100 was it necessary to continue for longer than fifteen minutes. Very careful records were kept and from these he deduced that 24 of the infants would have died if this particular apparatus had not been available. A further 138 would have died without resuscitation of some sort, while 315 would probably have lived without special measures. The method described is clearly capable of saving life but its application is at present limited to maternity units. A prompt supply of oxygen to the tissues of the new-born baby is probably of great importance even when breathing begins in a satisfactory manner, and we need some means of making oxygen as readily available as carbon dioxide now is to those who work in the patient's home.

[1] Martinez, D. B., *J. Amer. med. Ass.* August 14th, 1937, p. 489.

CARE OF THE BLIND

THE annual reports of the National Institute for the Blind show an ever-increasing activity and diversity of activities on behalf of the unfortunate one-in-seven-hundred of our population whose interests it has watched over for sixty-nine years. Its income, which in the past year amounted to about £160,000, is mainly derived from voluntary contributions, and is expended upon the training and encouragement of the blind to overcome their handicap, and upon the production of special appliances to enable them to ignore it. Among these appliances the Braille book takes foremost place. The institute transcribed, printed, and distributed, at a fraction of their cost price, 20,000 bound volumes of Braille last year, besides many thousands of pamphlets, transcriptions of music, special editions of the *Radio Times*, a weekly newspaper, and numerous monthly and weekly periodicals. It maintains a lending library of 2000 volumes ranging from literary criticism to the latest thriller, and a transcription service by means of which blind students may obtain any text-books which they need for their studies. For those who find Braille too difficult books and periodicals are also published in Moon type, a simplified variation of Roman letters. But only about a fifth of blind people have learned to read either of these types, and for the rest there is an increasing demand for "talking-books," which are read aloud and recorded on slow-moving gramophone discs. About 100 books have so far been recorded, and these are included in a free circulating library for those who have the necessary reproducing apparatus. Gifts from Lord Nuffield and others are enabling research to be carried out upon less cumbersome and expensive ways of recording. Massage has proved so suitable a profession for blind men and women that the institute has decided to extend its training facilities, and has moved its school and evening clinic for poor patients to larger quarters in Great Portland-street. The Alfred Eichholz Clinic, where blind chartered masseurs cater for paying patients, also continues to extend its work, and now supplies a full range of electrical and radiation treatment and baths. The institute already maintains three homes for blind babies, a special school for retarded children, a college for girls, convalescent and holiday homes for adults, and homes for the aged, and it is now to assume financial responsibility for Worcester College, the public school for blind boys, and has begun to build what will be the first holiday home for blind children at the seaside near Dymchurch. These are but a

few of the manifold ways in which the institute supplements the provisions of local authorities and coördinates the efforts of the county associations.

The needs of 2000 men who were blinded as a result of the war are still looked after by St. Dunstan's from headquarters in Regent's Park. Here also the aim has been at the settlement of the men in occupations which will allow them to lead as normal a life as possible, and the report for 1937 shows how successful this policy has been. New cases continue to occur, and 14 were admitted last year, the result of gas more than 20 years ago. A start has been made with the construction of a new home at Brighton for those who need institutional treatment, and whose increasing disablement with advancing years has rendered the present building inadequate.

St. Dunstan's and the National Institute are largely staffed by men and women who are themselves blind.

INDEX MEDICUS

WE have received from Colonel Harold W. Jones, librarian of the Army Medical Library in Washington, the second volume of the fourth series of the Index Catalogue. This contains 1104 pages, covering the letter B, with references to 8892 authors, 3631 books, and 79,874 journal articles, all of which have appeared since the corresponding letter of the third series. The Index deals with 1825 different journals received by the library, but Colonel Jones says this list may be increased as there are now other journals containing matter worthy of being listed in the Index. The library, he adds, is at present engaged in making biblio films of representative books, including a complete reproduction of the first volume of the fourth series. The possibility of obtaining such a photographic reproduction will mitigate the disappointment of those who omitted to obtain a copy of this volume before it was sold out. Further volumes of the Index may be expected at yearly intervals.

SYPHILIS, YAWS, AND BEJEL

THE vexed question of the relationship between syphilis and yaws seems to be no nearer answer, although it has been carefully studied in various parts of the world. On few subjects have expert opinions so widely diverged. Dr. Ellis Hudson's description of a form of treponematosis endemic among the Bedouins of the Euphrates Valley [1] has added piquancy to the discussion, since bejel (to give the disease its native name) is stated to have points of resemblance to both syphilis and yaws and yet to preserve its own individuality. Hudson [2] has lately given reasons for his belief that bejel forms an intermediate and possibly transitional stage between syphilis and yaws. The major characteristics common to the three diseases are the apparent morphological identity of the causative organisms, the close parallel of the serological reactions, and the response of the earlier lesions to modern antisyphilitic remedies. Bejel, like yaws, is acquired without venereal contact, is very common in childhood, and has a high incidence in infected communities. In both yaws and bejel the history of infection is easily obtained, since infected subjects are untroubled by shame or the desire for secrecy. Other points of resemblance are the lack of impairment of virility and fertility of infected communities, the absence of prenatal infection, and the rarity of lesions of the aorta, central nervous system, and viscera. Although the skin lesions of yaws and bejel are by no means identical there are said to be points of close resemblance; both diseases, again, are easily controlled by small doses of bismuth and both tend to disappear in communities that become subject to the influences of civilisation. On the other hand Hudson states that bejel resembles syphilis in "many of its general pathological aspects," in its occurrence outside the tropics, and in the constancy with which infection of mucous membranes is found. He concludes that bejel must be regarded as the prototype of modern syphilis—it is syphilis freely transmitted by non-venereal means and unhampered by the restrictions of civilisation and of modern antisyphilitic therapy. Furthermore he suggests that in bejel we have the picture of syphilis subjected to epidemiological factors similar to those of yaws and showing accordingly a much closer similarity in clinical characteristics. He believes that his evidence supports the opinion that yaws is syphilis modified by factors of age, race, and climatic and social conditions. But when his paper was presented to the Royal Society of Tropical Medicine and Hygiene it was clear that this interpretation of the facts was still unacceptable to those who have held the contrary view.

[1] See *Lancet*, 1936, **2**, 752.
[2] Hudson, E. H., *Trans. R. Soc. trop. Dis. Hyg.* 1937, **31**, 9.

SURGICAL TREATMENT OF PICK'S SYNDROME

CHRONIC constrictive pericarditis of obscure, probably various, ætiology and not associated with any gross cardiac lesion, is now a well-recognised clinical entity, but has only lately begun to attract the attention of surgeons. Several operations have been designed for its relief, but although good results have been obtained the value of surgical measures is not yet fully realised. The number of cases so far reported, chiefly from America and Germany, is comparatively small and in England, according to Pilcher [1] only one case like his own has been recorded. Pericardial resection was strongly advocated by Paul D. White [2] in his St. Cyres lecture for 1935, in which he cited 10 cases of Churchill's with 6 cures and 1 death; but he not unnaturally pointed out that the operation should be attempted only by an experienced thoracic surgeon. Benedetti-Valentin [3] now reports a case of Pick's syndrome associated with tuberculous polyserositis successfully treated by the older operation of Brauer combined with phrenic avulsion. This comparatively simple procedure is unlikely to be of much (if any) value in the majority of cases, but in this instance it led to a striking degree of improvement, where the more severe operation of decortication might have been fatal.

The patient was a lad of 16, admitted to hospital for observation after he had been ill three months with mild remittent fever, gradual enlargement of the abdomen, dyspnœa, and weakness. On arrival he seemed gravely ill; he was pale, emaciated, and dyspnœic, with a weak, rapid pulse. There was dullness at the bases of both lungs, with a pleural rub on the right. On exploratory puncture a clear fluid, giving a positive Rivalta test, was obtained from the left side. The area of cardiac dullness was somewhat enlarged, with distant heart sounds and no murmurs. The abdomen was grossly distended and paracentesis yielded 6 litres of fluid similar to that obtained from the pleural cavity and likewise giving a positive Rivalta reaction. There was œdema of the legs and scrotum. During a period of observation the patient, despite medical treatment, went steadily downhill. Paracentesis of the pericardium, producing 900 c.cm. of fluid with a positive Rivalta reaction, gave temporary relief; but fluid rapidly

[1] Pilcher, R. S., *Lancet*, 1937, **1**, 1323.
[2] White, P. D., *Ibid*, 1935, **2**, 539.
[3] Benedetti-Valentin, F., *Policlinico*, Oct. 18th, 1937, p. 1986.

reaccumulated in the abdomen and the patient became dyspnœic and cyanosed, the face and neck congested, and the pulse rapid and almost imperceptible. It was decided then to attempt a thoracolysis and this was carried out under regional anæsthesia on Jan. 13th, 1937.

The boy nearly died after the operation but improved after tapping of the abdomen and was soon able to get up. On May 15th the left phrenic nerve was evulsed, and eventually he was discharged from hospital feeling well and able to take long walks.

THE BASQUE CHILDREN

THE sojourn of 4000 Basque children in camp near Southampton, as related on another page, affords an example of modern methods and resource obliged to face a primitive situation. Interesting as it may have been for the children, it was still more exciting for the doctors, nurses, and St. John Ambulance men, and as an introduction to medical practice it certainly compared favourably with most locums or assistantships. Impetigo, scabies, measles, group psychology, children running amuck, prevention of typhoid by mass inoculation—here was liveliness enough, and those who enjoyed it may have come to realise that romance, in medicine at all events, is not a circumstance but an attitude of mind.

Five hundred of the children are now to be sent back to their homes or what remains of them, and we are glad to know that Dame Janet Campbell and Dr. Norman White are going to Bilbao with them on behalf of the National Joint Committee for Spanish Relief and will discuss arrangements for further repatriations. Meanwhile 3500 children remain to be cared for in this country. The French Government has been maintaining as many as 50,000 Spanish refugees at a time; but the children in England have been supported entirely by voluntary contributions, and most of them will require continuing help for some time to come.

ACUTE EPIDEMIC HEPATITIS

APART altogether from infective jaundice due to *Leptospira icterohæmorrhagiæ*, it is now recognised that there is another form of infective jaundice of which the essential pathological lesion is an acute hepatitis. This disease, long known as epidemic catarrhal jaundice, is preferably termed common infective hepatic jaundice or acute epidemic hepatitis and is to be distinguished from the much rarer condition in which the jaundice is obstructive in type as a result of catarrhal inflammation of the duodenum. The causal agent of acute epidemic hepatitis is at present unknown, though the inability to isolate any specific bacterium, the leucopenia and the relative lymphocytosis suggest that it may be due to a virus. It is believed that the disease is usually spread by droplet infection and that the incubation period is about four weeks. Attempts to transmit it to monkeys, ferrets, hedgehogs, and the commoner laboratory animals have up to the present failed. Now, however, Thune Andersen [1] claims to have transmitted acute epidemic hepatitis to pigs. In Denmark jaundice, associated with acute hepatitis, is not uncommon in pigs, while, as in England, acute epidemic hepatitis in man is more common in the country than in the town. The possibility thus suggested itself that acute epidemic hepatitis in man is identical with the acute hepatitis of swine, the infection reaching man not by the respiratory tract as commonly supposed, but by the alimentary tract as a result of the consumption of infected pork. By feeding swine on the livers of jaundiced pigs Andersen has produced a bacteriologically sterile hepatitis, the incubation period being only a few days, and in addition by feeding pigs with the duodenal contents of two human patients suffering from acute epidemic hepatitis he has set up a similar acute hepatitis.

While the experiments are suggestive they do not provide conclusive evidence that the jaundice seen in pigs in Denmark is identical with the acute epidemic hepatitis of man. In this country acute epidemic hepatitis is a very common disease but jaundice in pigs is extremely rare. In addition Andersen's theory hardly accounts for the epidemics of jaundice that are so common among children attending the elementary schools, where the school and not the home is obviously the focus from which infection is disseminated.

[1] Andersen, T. T., *Acta med. scand.* 1937, **93** 209.

SÖREN HOLTH

THE death of Dr. Sören Holth on Sept. 23rd at the age of 74 recalls the many contributions which he made to ophthalmology and which gave him a well-deserved international reputation. He was born in Norway and qualified as a doctor there in 1891. After some experience in general practice he began to specialise in ophthalmology, which he studied in Germany, France, and Italy. As his fame grew he was invited to lecture and to demonstrate his new operations in various countries, and in this connexion he visited Oxford in 1910, 1920, and 1923. Helsingfors in 1911 and 1931, Stockholm in 1929, and Budapest in 1932. He was elected one of the first members of the Oxford Ophthalmological Society, and in 1919 his work on glaucoma won him the Fridtjof Nansen prize. He was a brilliant clinician and operator, and his literary output was such that he published more than 100 works, which covered the whole field of ophthalmology. He was the first to define the clinical picture of miosis congenita seu microcoria familiaris (ex aplasia musculi dilatatoris pupillæ). His operation for detachment of the retina he abandoned as soon as he appreciated the advantages of the procedure devised by Gonin and his school. Holth's most important contribution to ophthalmology was his operation for glaucoma, whose popularity is still growing throughout the world. His large private practice in Oslo came to an end only in 1936 when his progressive deafness put a final term to it.

HEALTH MINDEDNESS

Dr. James Fenton, who is president this year of the Society of Medical Officers of Health, is also chairman of the Central Council for Health Education, and it was natural that he should take for his presidential address (on Oct. 29th) the thesis that knowledge is the key to health. Advertisements of health on hoardings are apt to appeal to fear and superstition, and Dr. Fenton is surely right when he says that the people neither know nor appreciate fully what is being done for them by existing health services. Cutting off the water-supply has been suggested as a good way to call public attention to the unrecognised benefits of local government, but he regards (a little regretfully) such a course as too drastic a lesson to be practicable. Does the citizen realise that a sum of £9 per head of population is being spent each year on social services against 19*s.* 2*d.* per head at the beginning of the century? It was this lack of public appreciation that led his own borough council of

Kensington in 1925 to appoint a health lecturer on the staff of the public health department; and the increased attendances at various public clinics have amply justified the expenditure. A paternal authority can protect people from the dangers of their environment, but their health must remain unsatisfactory unless supplemented by personal effort directed by personal knowledge. It was, he implies, the success of propaganda by the General Post Office and the War Office, and of campaigns for immunisation in certain American cities, that led to a belief in the value of a national campaign to encourage a greater use by the individual of the various opportunities placed at his disposal. Dr. Fenton emphasises another object of the campaign—namely, to arouse public interest in the work of health officers generally; at present they are inclined to rest on their oars and do not become themselves disciples of hygiene and effective propagandists. To those who would call a halt, fearing the wider application of science, he points out the danger of allowing the knowledge of human biology to lag behind. Suppression of disease is not the end, but rather the beginning of our task; we are spending much on correcting minor deformities and paying little attention to the prevention of chronic rheumatism. Everyone has a right to all the health and fitness which medical and scientific progress can give him, and the working-class dwelling will soon be crying out not only for a bathroom but for a refrigerator. Finally in our desire to impart knowledge let us not fail, he said, to recognise our own imperfections; the recently introduced refresher courses should enable the municipal medical officer to get first-hand knowledge of new administrative problems in areas other than his own.

MALARIA IN ENGLAND IN THE SEVENTEENTH CENTURY

IT is always interesting to speculate upon medical history though it may never be possible to verify the guesses. Engaged in this pursuit, Martini, the Hamburg entomologist, justly remarks [1] that one of the outstanding biological phenomena of the last hundred years is the disappearance of relapsing fever from Europe north of the line of the Alps—apart from a few endemic areas still existing (so we are told) in the estuaries of the Rhine, Thames, and Wash, where the disease has become so mild, however, that it is no longer fatal. The history of malaria has been much the same and Martini has tried to decide how far this disease was prevalent in England in the seventeenth century and whether the subtertian parasite (*Plasmodium falciparum*) played a part in it. From an intimate study of the original writings of Sydenham it appears that he fully recognised the mild vernal tertian relapses, and that he knew, as we do now, that the autumn is the season for the quartan fever; he also knew, as Korteweg has pointed out, that the tertian fevers occurring in July, August, and September are seldom severe. Sydenham recognised that ordinarily the æstival tertian fevers are not more dangerous than those of early spring. It was only in the "epidemic years" that this picture became blurred when numerous subtertian cases cropped up, in the intermittent or remittent form, and fatal cases were observed, either with prolonged fever or with cerebral attacks. He then noted that many serious cases drew benefit from quinine. At the same time it seems to have been fully appreciated that many of the tertian illnesses were mild, just as at present; moreover, diminished bodily resistance did not convert them into a fatal malady. On the other hand relapsing cases with double rise of temperature were much more severe; and judging by analogy these can only have been subtertian fever due to *Plasmodium falciparum*. We know that the mild tertian form produces no kind of immunity against this severe fever, and therefore, Martini argues, the inference is all the stronger that subtertian malaria was rampant in England in Sydenham's time. We can conceive of no other plague that has these characteristics and is pandemic only in the warm summer months.

[1] Martini, E., *Riv. Malariol.* 1937, **16**, 234.

GALVANI OF BOLOGNA

THE bicentenary of Luigi Galvani's birth was celebrated at Bologna from Oct. 17th to 21st when scientists from many countries gathered at the university where he worked as anatomist and medical investigator. The King and Queen of Italy attended the opening session of the congress, at which Prof. Quirino Majorana gave an account of Galvani's life. At a further plenary session next day Prof. Niels Bohr of Copenhagen spoke on biology and atomic physics, Prof. A. Gunsett of Strasbourg on radiobiology and radiotherapy, and Dr. E. D. Adrian, F.R.S., professor of physiology at Cambridge, on the electrophysiology of the sense-organs. For 150 years, said Prof. Adrian, Galvani's discoveries have never ceased to aid the progress of physiological research. Galvani showed that the current from a metallic couple will excite muscles and nerves—which has given us an unrivalled method of controlling their activity—and he showed that active muscles and nerves produce electric currents—which has given us a method by which their activity can be analysed. Later when the congress had divided into sections, Prof. Hevesy gave an account of observations in which radiophosphorus had been added to the food of animals and the path of the phosphorus atoms was traced through the various stages of the metabolic process.

Two books have been published to mark the occasion: "Il 'Taccuino' di Luigi Galvani" and "Memorie ed esperimenti inediti di Luigi Galvani," the respective publishers being Zarichelli and Cappelli, both of Bologna.

STATISTICS OF LONDON VOLUNTARY HOSPITALS

THE annual review of the work and finance of the London voluntary hospitals [1] has been issued much more promptly than its predecessor for 1935, and its message is equally encouraging. The beds available have increased by 160 to 18,160; the new in-patients by 6100 to 280,200, and the new out-patients by 66,000 to 1,941,000. The total out-patient attendances in the year for all hospitals were well over 10 million. The total maintenance income was the same as in the previous year (£4,196,000) but made up differently—subscriptions and donations being up and legacies down. The total general fund expenditure amounted to £4,260,000. There is thus a net aggregate deficit (of £64,000) for the first time since 1926. Actually 86 hospitals had surpluses while 59 had deficits. The explanatory text issued with these and other interesting figures suffers from the evident anxiety of those concerned with the maintenance of the voluntary principle to find in both surpluses and

[1] Published by King Edward's Hospital Fund for London. Pp. 32. 1*s*.

deficits, in increased expenditure and in economies, sound reasons for further support. But the Fund has certainly made out a good case to justify their confidence in the ability of the voluntary hospitals not only to retain public support but to play a worthy part in meeting the increasing demands for hospital services.

AN OBJECTIVE TEST OF MALNUTRITION?

SINCE writing last week on the measurement of dark-adaptation as a criterion of mild states of vitamin-A insufficiency we have received an issue of *Public Health Reports* containing a paper that rather severely criticises the method. A study of the technique of the biophotometer test as used by Jeans, Blanchard, and Zentmire [1] was undertaken by Palmer and Blumberg of the division of public health methods of the U.S. National Institute of Health.[2] The test is completely objective as far as the person recording the observations is concerned but is admittedly less objective as regards the person examined. Palmer and Blumberg lay emphasis on the improvement apparent when the examinee has learnt to use the instrument, the variability of the reactions of the same person in successive trials, and defects in the method of standardising the results. They tested 585 elementary school-children in Maryland and the District of Columbia, administering vitamin A to those that gave subnormal readings, and though details are not yet available the results were held to be unsatisfactory. Hence Palmer and Blumberg's verdict is that the test is unreliable; but others, while admitting the existence of difficulties, have regarded them as by no means overwhelming. The various techniques differ considerably in details but the psychological factors cannot be completely eliminated in any of them. Mutch and Griffith,[3] Harris and Maitra,[4] and the Danish workers to whom we referred all think the test by no means unsatisfactory, and it remains to be seen whether in larger surveys, with medication in subnormal cases, the method can be substantiated or not. For many reasons it is much to be hoped that it can.

UNDULANT FEVER IN CHILDHOOD

IN a paper from the institute of hygiene of Turin University di Aichelbourg and Prandi [5] remark that one of the unsolved problems of brucella infection is the incidence of the disease in early life. While some writers describe an attack under fifteen years of age as a rarity, and regard young people as more or less immune, others think that the lesser frequency of undulant fever in children is due to their having fewer opportunities for infection. Among 5253 children admitted to the pædiatric clinic at Turin from all parts of Piedmont during the period 1926–36, a clinical diagnosis of brucella infection, subsequently confirmed serologically, was made in only 6 (0·11 per cent.), their ages ranging from two to eleven. Afterwards, however, on using Wright's reaction in the serum of 151 children suffering from various febrile conditions, anti-brucella agglutinins were found in 5 (3·2 per cent.) between the ages of two and twelve; one of them had undulant fever, one had pulmonary tuberculosis, one had acute adenoiditis, one had broncho-pneumonia, and one was considered healthy. The authors' conclusion is that infections by organisms of the brucella group are more widespread in childhood than is commonly supposed.

[1] Jeans, P. C., Blanchard, E., and Zentmire, Z., *J. Amer. med. Ass.* 1937, **108**, 451.
[2] Palmer, C. E., and Blumberg, H., *Publ. Hlth Rep., Wash.* Oct. 8th, 1937, p. 1403.
[3] Mutch, J. R., and Griffith, H. D., *Brit. med. J.* Sept. 18th, 1937, p. 565.
[4] Maitra, M. K., and Harris, L. J., *Lancet*, Oct. 30th, 1937, p. 1009.
[5] di Aichelbourg, U., and Prandi, G., *Arch. ital. Pediat. Puericolt.* 1937, **5**, 115.

THE NOBEL PRIZEMAN

THE Nobel prize for physiology and medicine for 1937 has been conferred on Prof. Albert von Szent-Györgyi of the institute of medical chemistry of the University of Szeged, Hungary. Though still a young man, Dr. Szent-Györgyi has already given many years to the study of oxidation mechanisms, which he has pursued at Cambridge as well as in Hungary. In 1927 and 1928 he was studying the substance "hexuronic acid" which he obtained from the adrenal cortex and from various plants and animal tissues. This substance appeared to be connected with oxidation mechanisms, and he was struck by its similarity to vitamin C, both in distribution and chemical properties. In 1931 with the American worker J. L. Svirbely, he was able to show that hexuronic acid had strong antiscorbutic properties; independently and simultaneously C. J. King and his collaborators found that their crystalline vitamin-C preparation from lemon juice had all the chemical and physical properties of hexuronic acid. Shortly afterwards Szent-Györgyi found that the Hungarian red pepper (paprika) was extraordinarily rich in vitamin C, which made it possible to prepare large quantities of the pure crystalline vitamin. This led the way to the establishment of its chemical constitution by Haworth and Karrer and ultimately to its synthesis. The term "ascorbic acid" for vitamin C was proposed by Szent-Györgyi and Haworth in 1933. The new prizeman may also claim to be the pioneer in vitamin-B_2 research for he was the first to show, in 1932, the presence of flavine in animal tissues; this was when he described the substance "cytoflav" in heart muscle. Throughout his career he has worked on the respiration of tissues, and much has been done with his collaborators in Szeged during the last five years. During this period he has evolved the theory of the catalysis of tissue respiration by C_4-dicarboxylic acids, and this work has stimulated a great deal of research into the intermediary metabolism of tissues.

ON Nov. 9th and Nov. 11th Dr. HAROLD SCOTT will deliver two FitzPatrick lectures on the conquest of disease in the tropics. The lectures will be given at the Royal College of Physicians of London at 5 P.M., and medical practitioners will be admitted on the presentation of their card.

Prof. JACOBÆUS died in Stockholm on Friday of last week after attending on Thursday the meeting to award the Nobel prize for medicine. For 20 years he had held the chair of medicine at the Medical Institute and worked out there the practice of thoracoscopy for which he will be gratefully remembered.

Prof. W. W. JAMESON, dean of the London School of Hygiene and Tropical Medicine, has been invited to act as an external assessor in the public health examinations of the Kitchener School of Medicine, Khartoum, in December. He will take the opportunity of visiting also the medical schools for the training of African natives in Nigeria and in Uganda, and has this week left London for West Africa.

SPECIAL ARTICLES

FOUR THOUSAND BASQUE CHILDREN

THE REFUGEE CAMP AT SOUTHAMPTON *

BY RONALD G. GIBSON, M.R.C.S.

IT is now more than five months since the Spanish refugee children arrived in England. One has read with interest the account of their examination at Bilbao by Dr. R. W. B. Ellis and Dr. Audrey Russell[1] and of their arrival and examination at Southampton by Dr. H. C. Maurice Williams,[2] and it now falls to my lot to write of their stay in camp at North Stoneham, the third episode in the pathetic history of four thousand children who, through no fault of their own, had to leave their homes and take shelter in this country. Many of the criticisms of this camp and of the deeds and misdeeds of the children have appeared to be rather intolerant. Rumours, most if not all of which had no foundation on fact, were started and grew with the telling, and I am glad of this opportunity to describe the life of the children in the camp as it appeared to us in the medical unit, the difficulties that we had to overcome, and the coöperation that we received from all sides.

On my arrival at North Stoneham Camp on May 21st I found an area of about forty acres of grass land on which 120 bell tents had been pitched with three or four marquees, one of which was labelled "Médico," but contained nothing in the way of medical equipment. Very little had been planned to deal with the medical needs of the children, indeed the date of disembarkation and the number to be provided for was still uncertain.

It was not until the next day that the enormity of the project undertaken was borne upon me. I was asked to call in at the committee's office at Southampton, and here, while persuading two ardent volunteers against converting me to the Extreme Left, I learnt some of the innumerable arrangements that had to be made and difficulties that had to be overcome in the organisation of this refugee camp. News had only just been received that 4000 children were arriving instead of 2000, their ages ranging from six to fourteen. These were to be housed, fed, clothed, and kept under constant supervision for an indefinite period, and sufficient money had to be collected to make all this possible—imagine a town of 4000 population having to be kept on voluntary subscriptions. Moreover, these were children from a foreign-speaking country, most of whom had known in the past twelve months hardships and privation incomprehensible to the average English mind.

PREPARATIONS

Having justified my existence by suggesting roofs for the latrines and floor-boards for the tents, I returned to the camp much over-awed and minus a new hat that I had left in the office and was doomed never to wear.

That evening I learnt from a doctor who had volunteered to organise the medical side of the camp, and whose good work could never be sufficiently praised, that there were to be three medical officers—Taylor, as S.M.O., Cobb, and myself (see *Lancet*, 1937, **1**, 1303). The accommodation so far consisted of a marquee in the camp and an uninhabited house, Moor Hill, some six miles away, which had been lent for use as a nursing-home. This latter was in a bad state of repair, and the sanitary arrangements were totally inadequate for the forty patients and necessary staff that it was hoped to house there: volunteers were working hard to make it "good enough" by the time the children came. Matron was already at the camp and there was to be a sister and a trained staff both at Moor Hill and at the camp. St. John ambulance men had volunteered for night duty at the camp. No one knew anything of the health of the children who were arriving except that two English doctors had gone over to examine them before embarkation, and that they would all be re-examined on arrival at Southampton, the verminous ones to be sent to Southampton baths where an army of volunteers would de-louse them, the Borough Hospital and Borough Isolation Hospital to receive some, and the rest to be sent on to the camp; variously coloured labels were to be tied to their wrists, and they would all be numbered.

The next day Taylor arrived and we went over to see Moor Hill; here we found a tired but triumphant staff. Wonders had been worked with the house itself, the wards were ready for the patients, and the whole place had been spring-cleaned throughout several times. I will say little of the sanitary arrangements, which were at all times inadequate, but that the best had been done in the short time available. That evening was spent at a staff meeting at which the arrangements for the disembarkation were discussed. s.s. *Habana* had left Spain with its cargo of refugees; they had been attacked from the air before they embarked and again as they left port, and almost every child was suffering from sea-sickness. Arrangements were made for a launch to go out to meet the boat with lemonade, chocolate, and bread (since it was not known whether the children would have had anything at all to eat while on board), and for hot drinks and food to be at the docks. Opinions varied as to how long it would take the port medical authorities to examine the children—indeed, some said it might be necessary to feed a varying number at the docks for as long as six days. They were due to arrive in Southampton Water on Saturday night and to begin disembarking early on Sunday.

The following morning we spent in ordering the necessary medical stores and equipment. When we returned to the camp at lunch time most of the tents were up. It was quite clear that one medical tent was totally inadequate, so it was decided to erect another about a hundred yards away from the first, henceforward to be called Medical Two and destined to become the hub of the whole medical unit. Taylor and matron being busy with Medical One which had to be ready by the next morning, I set about Medical Two with Sister Bishop and "Maurice" (a young interpreter who attached himself to the medical unit and whose services proved to be invaluable). Carpenters were roped in, boy scouts were persuaded to help, any stray individual without a job was cajoled into our service and Medical Two gradually but definitely began to take shape. An out-patient department was arranged at one end of the tent, and at the other two small examination rooms; shelves were put up, table-tops stolen for floor boards and three or four balanced on forms to make temporary beds for the patients. In the midst of all this Cobb

* This article is appearing in the *St. Bartholomew's Hospital Journal*.

[1] *Lancet*, 1937, **1**, 1303.
[2] *Ibid*, p. 1383.

arrived and, after a preliminary expression of dismay and amazement which may be forgiven him, set to with a will to help finish Medical Two. In the early hours the medical unit betook itself to bed wondering all the more what was in store for it in the morning.

THE ARRIVAL

Cobb and I were wakened by Taylor, who had an unconquerable and incurable habit of getting up just as everyone else was thinking of going to bed, with the news that he had been on the boat and that, contrary to our worst fears, the children were mostly very happy and clamouring to get ashore. When the launch arrived with the lemonade, &c., they were having a hearty meal which included a hot drink. By now the boat had docked, examinations had begun, and the first bus-load might be expected at the camp at any moment. Cobb and I were to examine the children as they left the buses—their third examination since leaving Bilbao—and were to select a hundred of the younger ones who needed special care to go to the girl guides' camp, to take the numbers of those who were under-nourished for special treatment at Medical Two, and to send any needing immediate treatment to Medical One. Here they would be treated as out-patients or sent by car to Moor Hill. Above all we were to pay special attention to any eye or skin complaint.

The tents were arranged in three groups, to be known as Camps I, II, and III, and we decided that the children treated at the baths should go to Camp II. As the buses arrived the refugees were first examined by us and then taken off in batches of ten to their tents. It became obvious from inspection of the first bus-load alone that although the malnutrition was far less than we had been led to expect our first enemy was to be impetigo from which almost one child in ten was suffering. Special tents were set aside for these cases. In between arrival of buses we went along to Medical One to examine those we had sent there. Here we found two or three interpreters taking the names and details of the children as they came in. The V.A.D.'s were doing dressings, comforting the frightened, answering innumerable questions, dealing tactfully with well-meaning visitors, running errands, arranging for cars to go to Moor Hill, fetching food and drink for the patients, always present and ready in any emergency, and never shirking any job however difficult or unpleasant; would that words could be found sufficiently to praise such willing and unselfish service as they gave that day and all the succeeding days of the camp. As for the children, some were resigned to what must have seemed to them an endless round of medical examinations, some were frightened, some curious, some indifferent, and a few seemed to understand that we were their friends and were doing our best to help them. At 6 o'clock we had the first thunder-storm of the day, no more children were to arrive, so I walked down to the far end of the camp where the tents for the impetigo cases had been pitched. The tents were full of children but only three patients were present; the rest, I was told, did not care for the tents or the people in them and had gone off to others.

As a result, Taylor decided that each morning at 7 o'clock there would be a medical inspection of the entire camp—he would take Camp I, Cobb the second, and I the third; the children were to be lined up outside the tents with their teachers (there was one Spanish mæstra to twenty children); the tents were to be brailed up and the palliasses, blankets, &c., neatly folded and arranged around the interiors, which were to be thoroughly swept out. Buckets were provided in the lines for rubbish and these were collected and emptied by a member of the sanitary squad each morning. A prize would be given for the best tent in each camp and the numbers of the very bad tents broadcast—we found afterwards that the children much preferred hearing their tent mentioned over the microphone to receiving the prize.

Picture the medical tent that night. In the inner room a hysterical mæstra weeping for her lost relatives in Bilbao; in the outer room two young boys found by the St. John's men too exhausted and collapsed to reach their own tent; a wretched light from two storm lamps, and a stuffy heat from an oil stove; two rather apprehensive V.A.D.'s doing their first night duty; and rain beating against the tent making conversation impossible. I was called out by one of the night patrol to a child with toothache; it took us some time to find the tent which was so securely laced up that we wondered whether the occupants ever intended to emerge again. Inside four children were sleeping together under a vast pile of blankets, two others apparently preferred to sleep alone, and the seventh—the patient—half-dazed with pain, was lying with her head in a puddle of rainwater.

The remaining children arrived from the port the next morning. Evacuations from the camp were to start on the morrow and it was therefore thought wise to use Medical One solely for examination of children for evacuation and Medical Two for all other purposes. Two more M.O.'s joined the unit—Dr. Daly who took over Moor Hill, and Dr. King, non-resident, to help at Medical One when needed. Cobb and I were too busy at Medical Two to be able to help elsewhere. The out-patient department was dealing with over 200 patients a day and, in addition, the cases to be seen by us followed one after the other in an endless stream from early in the morning until late at night; the majority of these were "pyrexias of unknown origin" which could not be sent to Moor Hill, but had to be kept under observation on our improvised table-top beds and in three bell tents adjoining.

PROBLEMS OF ORGANISATION

On June 19th Bilbao fell to the insurgents. There were two alternatives as far as the camp was concerned; to tell the children at once over the microphone or to let the news leak through to them gradually—both possibilities had their advantages and both their disadvantages. Eventually the former course was decided upon, and I think wisely. It is impossible to describe the howl of dismay and anguish which went up as the news was broadcast; suffice it to say that those who heard it will never forget it. The Medical Tent was soon filled with hysterical children and mæstras. One will never quite forgive these teachers for their behaviour that night, for most of them, instead of looking after and consoling the children in their care, gave way to their own personal grief, and the children consequently were neglected. Some of the English staff were also not without blame—there was a tendency with them to dramatise the situation unduly, and many children were persuaded into the medical tent who would otherwise have gone quietly to their own beds. Dr. King stood at the door of Medical Two with a bottle of syrup of figs in his hand, and as the children came in they were consoled with a few well-chosen words, given a dose of syrup of figs, and sent back to their own tents. This treatment was far more effective than all the bottles of sedative mixture handed out so liberally by well-meaning helpers. Two cases of genuine

hysteria were admitted to the observation ward that night and discharged as well next morning.

An Eastleigh dentist volunteered to visit the camp two or three mornings a week. He lent us a gas apparatus which we were to find very useful. In addition, an orthopædic and an ophthalmic surgeon offered to help us with any cases on which we felt we needed further advice; moreover, the Southampton Free Eye Hospital agreed to treat any ophthalmic cases we had either in their out-patient department or as in-patients, and a firm of opticians in Southampton volunteered to make spectacles for the children free of charge.

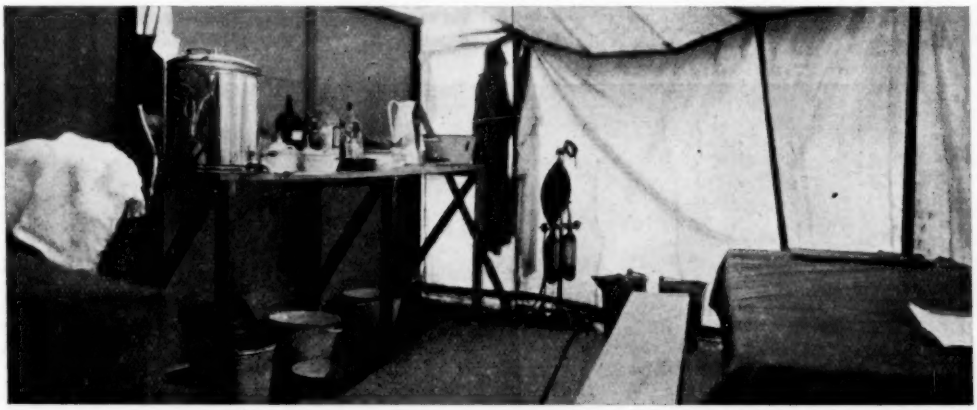
Mention must be made here of one department of the medical unit which for the first two months or so of the camp worked so unobtrusively that few knew of its existence; I refer to the washing tent, or, as we preferred to call it, the Lyceum or bug-house. A marquee was put up near Medical Two and here four or five ladies, working all day and every day, fought bravely against the pediculus capitis and corporis. Children were fetched in from the camp by tent-loads for baths and head-washing, and so independently did these ladies work that for weeks they fetched and carried their own buckets of hot and cold water from the kitchens. One day it was my odious duty to condemn as unfit for human consumption some sacks of fish that had been hidden for weeks under four perfectly good baths and forgotten. Children had smashed in the side of one of the baths and were busily eating the raw fish. It occurred to us that the baths could be used for a better purpose, and within one day the washing tent was re-born; water was laid on, four boilers were provided to feed the three baths with "constant hot water," a special compartment was set side for the treatment of scabies cases, and the rest of the tent used by the head washers and hair dressers. Nearly 200 children were given hot baths each day under this new scheme, and it was hoped that each child would thus receive at least one hot bath a week. In addition, shower baths were available for the children from 10 until 6 o'clock each day.

After two cases of typhoid had broken out an isolation unit was formed at the far end of the camp for investigation of contacts. At the same time Medical Two was extended, an army hospital marquee equipped with twelve beds being put up behind the existing marquee for use as an observation and casualty ward. We were also provided with a store tent and four bell tents for the doctors, interpreters, and the two Spanish boys employed as "medical orderly officers"; all these were enclosed by fencing, and with the addition of electric light and a luxurious latrine lent by the Southampton Corporation and

"North Stoneham Camp . . . an area of about forty acres on which 120 bell tents had been pitched . . . in three groups to be known as Camps I, II, and III."

procured from under the very nose of the quartermaster, who had intended it for the use of the administration staff, Medical Two became entirely self-supporting. The isolation camp was under the care of Dr. Daly; Cobb had gone over to take charge of Moor Hill, and I was left to deal with Medical Two by myself.

We unfortunately had to send one boy, reputed to be fourteen, to a mental hospital near Fareham. This boy had violent attacks, when he became dangerous to himself and to his friends. He was the leader of a gang of about twenty boys who were being sent to an isolated spot in South Wales. On the day of their departure he had two attacks, in the second of which, just before the bus was due to leave, he attacked one of his friends; he was taken to a nearby tent and after two hours, during which four people were required to hold him down, we succeeded in removing him to the observation ward at the far end of the camp. This manœuvre served a useful purpose, since his friends had previously refused to leave without him and had threatened to injure any of us if we did him any harm; when they saw him being taken, apparently



"An out-patient's department was arranged at one end of the tent. . . ."

willingly, to Medical Two they changed their attitude and accepted our assurances that he was too ill to leave. Our difficulties did not end here, however, for while the necessary arrangements were being made for his admittance to hospital he eluded his guard, escaped under the side of the tent and over the surrounding fence, and was next seen waiting for the bus with his friends. It was left to the police to arrest him at the station before boarding the train—an effort which caused a minor riot on the platform and persuaded the boys to wreak their vengeance on the railway company by pulling the communication cord three times on their way to South Wales. One other case was admitted to a private mental home, a boy who suffered from similar attacks but preferred the use of a knife to his fists. Two boys, the one a kleptomaniac and the other who was considered to exert a bad moral influence on the children with whom he came in contact, were kept under special observation.

"V.A.D.'s . . . comforting the frightened . . . ."

There was a lighter side to the work of the medical unit. Sister complained that there were so many cases of sun-burn that it was almost impossible for the nurses to deal with them. We discovered that the one great aim of the children was to be able to tell their friends that they had undergone an operation, when they automatically became heroes. The treatment of sun-burn with lotio calaminæ gave them the opportunity without the necessary discomfort usually associated with surgical treatment. They would emerge from the tent with all their exposed parts caked with lotio calaminæ and an assumed look of agony on their faces. The substitution of lotio plumbi for the calamine lotion produced a noticeable decrease in the number of sun-burn cases.

Rather amusing also was the success of our "cod-liver oil and malt clinic." At the morning inspections we each picked out any children showing any signs of under-nourishment. They were told to visit Medical Two twice a day and were allowed to help themselves to a teaspoonful of Irradex. To our astonishment this became so popular that at 9 and 6 o'clock long queues would extend from Medical Two, consisting not only of the patients but also of their friends and the friends' friends, and the greatest difficulty was experienced in preventing the same individual from rejoining the queue time and time again. Another popular feature was the Horlick's tent, and the children were allowed as much *lêche malteada* as they could drink each day.

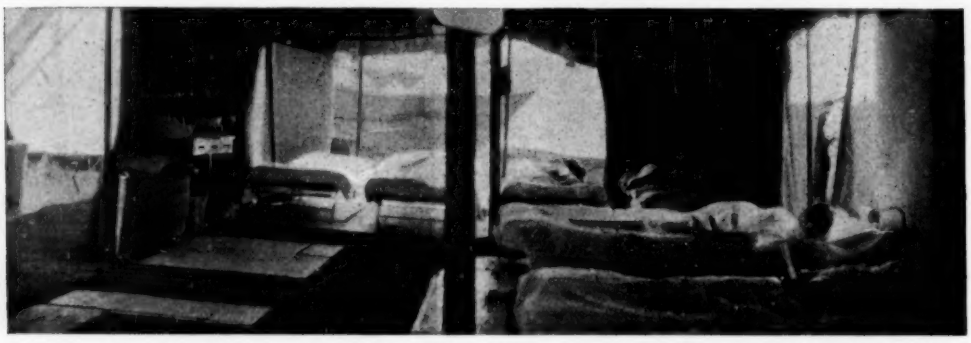
Meanwhile, day by day children were leaving for homes throughout the country and the camp was gradually diminishing in size. At the beginning of July Moor Hill was closed and was converted into a home for 40 children. The isolation camp became the hospital camp, three marquees being used as wards. The only patients requiring to be isolated at this time were those with scabies, who were treated in bell tents in a far corner of the original isolation compound. Daly and I were then the only two M.O.'s remaining.

THE PATIENTS

On the first day 23 sick children were sent from the camp to Moor Hill and some from the port, including one pulmonary tuberculosis. Comprehensive notes were taken on each patient, being headed by the child's name, number and tent number, sex, age, and number of relatives, if any, present in the camp. Impetigo cases had a yellow label attached to their card—this was later used to signify any infectious or contagious disease—Moor Hill a blue label, and any case of pediculosis a red one. The cards were filed numerically, since the names were nearly all unreadable and unpronounceable—especially as each child had two surnames, that of the mother and of the father.

The cases sent to the Borough Hospital from the port included one each of acute cholecystitis, bronchopneumonia, a dental sepsis, septic knee, strangulated testicle, malnutrition, bronchiectasis (now at the French Hospital in Soho), iritis, acute impetigo, acute bronchitis, and three cases of ringworm.

It was in the first week that one of our "P.U.O.'s" developed a morbilliform rash and we resigned ourselves to a measles epidemic—this never materialised, and although during the four months of the camp there have been 22 cases of measles they were all sporadic cases, and in the past two months no case has occurred at all. There were



". . . an army hospital marquee equipped with twelve beds . . . for use as an observation and casualty ward."

many complaints of "sore-throats" and, since one case of diphtheria had been sent to the Isolation Hospital from the boat, every child with a suspicious throat was given 8000 units of antidiphtheritic serum and kept under observation until a negative report on the throat swab was returned, after which the case was transferred to Moor Hill—excellent results were obtained from the use of Streptocide in these cases. It was absolutely essential that no infectious disease should be introduced into Moor Hill for we had no other accommodation in the camp for in-patients.

With two cases of typhoid from the boat and another from the camp in the first week, it was perhaps natural that we should have regarded even those children complaining of the most minor gastro-intestinal symptom with the gravest suspicion—it was one day in the second week that I had two children within half an hour of each other and from the same tent, with such distended and tympanitic bellies as I never hope to come across again; they were sent to isolation tents and, after each had received a dose of syrup of figs, rapidly resumed their normal contours! We had in all five cases of typhoid—the two from the boat and three in the camp, including unfortunately two from Moor Hill. We therefore undertook to inoculate all the children remaining in the camp (nearly four thousand) with T.A.B. vaccine. Two doses were accordingly given each child with a week's interval between the injections. Whilst in a very small proportion of cases the local reaction was severe—although not so severe as to cause any anxiety—only in one or two cases was the general reaction bad enough to warrant treatment in the wards. The prophylactic value of inoculation with T.A.B. vaccine is well known and has been summarised by Dr. Richard W. Taylor.[3] It is claimed that this is the first authentic report of typhoid prevention by mass inoculation. Although conditions in the camp were ideal for a typhoid epidemic no case occurred after these prophylactic measures had been carried out. One of the five cases on discharge from the Isolation Hospital was found to be running an evening temperature; although not complaining of any pain in the chest, examination of the left side showed all the signs of an extensive pleural effusion. This has since cleared up and the patient is now convalescing in the camp hospital.

I would stress the fact that we could have expert ophthalmological advice when we wanted it, especially with reference to a case of trachoma that was diagnosed at one of the hostels in London to which some of the children had been sent. This patient was treated as an in-patient at Westminster Hospital for three days and then returned to the hostel. A Sunday newspaper reporting the case under blazing headlines emphasised the fact that the port medical authorities had only one minute for the examination of each child. They completely overlooked the fact that each child was examined at Bilbao, on arrival at the port, on arrival at the camp, subsequently each morning, and with particular care before being passed as fit to leave the camp for homes in any other part of the country. Furthermore, practically every child suffering from any eye trouble, however slight, was seen by the ophthalmic surgeon at Moor Hill during the first weeks of the camp, and any needing special care were sent to the Free Eye Hospital. Finally it may be said that the child left the camp with one of the first batches to be evacuated, three months before the diagnosis of trachoma was made and confirmed.

On June 30th we had the first case of scarlet fever. Rounding up the contacts was difficult, but eventually we decided to take the children from the patient's tent and from the four tents immediately surrounding it and treat them as contacts. They were accordingly put in a special isolation compound, fed separately, and examined twice a day. On July 8th another case occurred from another part of the camp—this necessitated the isolation of a further batch of contacts. Seven days later one of the contacts developed the disease, and one day later one case occurred at Moor Hill—very disturbing for us since we were now unable to send any patients over there and none could be discharged. There were no further cases, and when the day arrived for discharging the contacts they all refused to leave as they were far more comfortable and better looked after where they were! We were free from scarlet fever until August 31st when, ten minutes before I left the camp, a boy in the observation ward was found to have developed a typical scarlatiniform rash. I should mention that in the districts surrounding the camp there were cases of mumps, measles, whooping-cough, diphtheria, scarlet fever, and chicken-pox, so that we had no reason to complain of the way fate was treating us, since from the middle of July until the end of August there was not one single case of an infectious fever in the camp—this in spite of the fact that the Spanish children were mixing quite freely with the children from the neighbouring towns and villages.

When the first case of scabies was diagnosed it was too late in the day for any treatment to be undertaken until the morrow, and orders were given for the tent to be enclosed by fencing for the night. Within five minutes practically every child in the camp was out of bed and round the administration tent. The rumour had spread that typhus had broken out. No reassuring words would convince them that this had not happened and eventually the fencing had to be removed. Altogether there were 70 cases of scabies. The routine adopted was to isolate the patient for treatment with Dettol and sulphur baths and to fumigate his clothes and belongings; the condition usually cleared up after two or three of these baths. The other children in the tent were examined each morning and given a hot bath daily. The tent was struck and a new tent, palliasses, and blankets provided. In spite of these precautions we could not stamp out the disease; in fact, the cases were increasing in number to such an extent that a few weeks ago the entire camp was moved to fresh ground and every child given a new palliasse and blankets. Since that day it is true to say that there have been more cases of scabies than ever before. Two cases of sulphur dermatitis were seen following treatment.

The cases sent to the County Hospital at Winchester included an acute otitis media and an acute appendicitis, two cases of inguinal adenitis, a cellulitis of the face, a perforated soft palate, two lacerated fingers (caused by a mangle in one of the mess tents), and an hæmoptysis, later sent to the French Hospital for a fuller investigation. One mæstra, complaining of œdema of the legs and giving a past history of a cerebral embolus two years ago in Spain, was found to have mitral stenosis; she was sent to Moor Hill and a few weeks later died as a result of a pulmonary embolus; it is difficult to understand why she was ever sent over. The child with pulmonary tuberculosis sent from the port to Moor Hill was

[3] *Brit. med. J.* Oct. 16th, p. 760.

transferred to University College Hospital and died a fortnight after admission.

There have been two road accidents—one, a girl aged eight, received a fractured skull and severe laceration of the scalp; the other, a boy, also received head injuries. The most interesting fracture was one of the coracoid process of the scapula extending into the body; others included a green-stick fracture of the radius, three fractured metacarpals, one fractured metatarsal, and a fractured skull as described above.

In the third week we were receiving an increasing number of children complaining of boils and of constipation. For the former a change of diet was prescribed and six intramuscular injections of 1 c.cm. of manganese butyrate were given, the course extending over twelve days. The results were excellent. The constipation was more difficult to treat; castor oil was considered a treat to be anticipated with some relish, a dose of syrup of figs brought forth gratifying requests for more, milk of magnesia was much appreciated, and army No. 9's swallowed without resentment—but to all these the constipation remained intractable. Almost in despair we tried haustus albus, with immediate and full effect; our prestige was restored, and no longer did "B.N.O. since Bilbao" or "? B.N.O. since birth" appear on the patients' notes.

We sent to the Borough Hospital at Southampton a case of apthous stomatitis, a lacerated finger (the mangle again), an acute lobar pneumonia, and an acute periostitis. Cases treated at the Free Eye Hospital included a meibomian cyst, a severe conjunctivitis and blepharitis, a traumatic keratitis, and a suppurating cyst of the lower lid. Erythema nodosum was the most interesting skin disease that we met; there were, too, several cases of urticaria, three of ringworm, two of psoriasis, one of seborrhœic dermatitis, and impetigo, scabies, and pediculosis as described above.

The camp closed on Sept. 18th, the children remaining there being transferred to St. Mary's Bay holiday camp at Dymchurch—it was clearly impossible to keep them under canvas any longer. The problem of repatriation will be a difficult one for many reasons, not the least of which being that some of the children have no longer any homes or relatives to return to. The change in the attitude of the children towards the doctors and nurses as day succeeded day was gratifying; they learnt to bring all their troubles, physical or mental, big or little, to Medical Two; they treated it as a lost property office, as a place where they could get their letters translated, where they could obtain chits for new clothes and shoes—if the M.O. on duty was in a good mood—and one or two would come in and ask if they might rest there for a little while as they were tired and could not find another quiet spot in the camp.

An endless debt of gratitude is owed to the St. John Ambulance men who, although at work during the day, gave up their nights to do duty at the camp; to the nurses, trained and untrained, who carried out their duties so efficiently and so sympathetically—most of the V.A.D.'s continued to come up every day even after the official support of the Red Cross had been withdrawn; to the volunteers who lent their cars for the transport of patients to and from the various hospitals, and for the innumerable other errands required by the medical unit; to the interpreters; and to the voluntary helpers in the medical unit whose job it was to make beds, wash the dirty linen, feed the patients, and keep the medical tents clean and in good order, without whom the work of the doctors would have been impossible.

Of the children I would say this: were English children ever fated to be placed in similar circumstances and to undergo similar hardships (which God forbid), and were they to behave as the majority of these Spanish children behaved, England would have just cause to be proud of them. Let any man who would criticise take four thousand healthy children from any country, billet them in a foreign field for four months away from their normal life, their normal surroundings, and their normal habits; then let him say, as we say who were with these Spanish children, that their courage, patience, adaptability, and good behaviour was admirable.

DEVELOPMENTS AT OXFORD

THE NUFFIELD PLANS TAKING SHAPE

THE first report of the Nuffield Committee covers only the eight months ending with last July, but it also includes information about happenings that were then only in prospect.

It deals first with the development of the professorial departments and then with related developments in the scientific departments. Having appointed Mr. Hugh Cairns to the chair of surgery, the committee have used his services in planning facilities for his work. A new ward is to be constructed at the Radcliffe Infirmary together with an operating-theatre, X ray theatre, and appropriate office accommodation, and his staff will include a first assistant, a research fellow, a house surgeon, a secretary, a technical assistant, and a neuropathologist. Of these the first assistant (Mr. J. B. Pennybacker) and the secretary have already been appointed, and capital expenditure up to £2000 has been authorised for equipment.

Since his appointment to the chair of anæsthetics Dr. R. R. Macintosh has spent some time in America investigating anæsthetic practice and apparatus. His departmental staff will include a first assistant, secretary, and mechanic, and there will be five junior assistants, whose appointments will be each for two and a half years. The first of these will be elected during the year 1937–38, and the remainder at intervals of six months. The two anæsthetists at present at the Radcliffe Infirmary will become assistants to the professor, working under his direction in the collection of material for research and in the development of the anæsthetic service. A sum possibly as large as £2500 is to be provided for new equipment.

The Radcliffe Infirmary at present has no special gynæcological ward, but a new ward will be built at the same time as the new ward for surgery. It is to have an operating-theatre which will have to be temporarily shared with the professor of surgery. A new wing is to be added to the maternity home to provide an operating-theatre and accommodation for teaching and research. Dr. Chassar Moir, the professor, will have Mr. J. A. Stallworthy as first assistant, and also two house surgeons, a secretary, and a technical assistant. Capital expenditure up to £2400 has been authorised to provide new equipment including X ray plant.

At the time of the report no appointment to the Nuffield chair of medicine had been made, and so far as this department is concerned the discussions of the committee have been deliberately limited to matters of principle.

Of the "associated hospitals," the honorary clinical director of the Wingfield-Morris Hospital, Mr. G. R. Girdlestone, has been made Nuffield professor of orthopædic surgery without stipend and without restriction as to private practice. It is proposed to appoint an assistant to him, whose duties will include laboratory research, coördination between laboratory and ward work, and ultimately supervision of research students. The honorary pathologist of the Radcliffe Infirmary, Dr. A. G. Gibson, has been appointed Nuffield reader in morbid anatomy, and Dr. A. H. T. Robb-Smith, assistant director of the department. Apart from new personnel, the need for new equipment and increased accommodation is specifically recognised. The reader in bacteriology, Dr. A. D. Gardner, has been accorded professorial status, and as soon as the coöperation of the Nuffield professor of medicine can be secured a clinical biochemist is to be appointed.

In addition to the developments in connexion with the Radcliffe Infirmary and "associated hospitals" certain provisions have been made for increasing the ability of the scientific departments to coöperate in the work of expansion and progress of medical research. Graduate assistants are to be, or have been, provided, in the departments of biochemistry, physiology, and pharmacology, and for the director of the Nuffield Institute for Medical Research. Prof. J. A. Gunn, director of the Institute, has relinquished the university chair of pharmacology, and Prof. J. H. Burn has subsequently been appointed to succeed him in it. A grant for material and apparatus has been made to the biochemical department, and Dr. S. Zuckerman has been given a grant for research in experimental endocrinology for four years. He is to coöperate with any of the Nuffield professors.

When adequate accommodation is available, expenditure of about £8000 on radiological equipment is foreshadowed. Although the final form of the organisation of the radiological department has not yet been decided upon, additional appointments will probably include an expert radiologist, an additional radiographer, a dark-room assistant, and a secretary. The committee regard as particularly important the elaboration and maintenance of a department for clinical records and "follow-ups." Proper accommodation is to be provided, and a records officer is already appointed.

The report concludes with a reference to the relations between the University and the Infirmary. It insists that coöperation between the University and the "associated hospitals" is a necessary part of the scheme, and it is confident that, despite early difficulties, such coöperation is now fully assured.

UNITED STATES OF AMERICA

(FROM OUR OWN CORRESPONDENT)

POVERTY AND ILL HEALTH

THE note struck at the opening meeting of the American Public Health Association, reported in my last letter, proved to be the dominant one of the convention. It was sounded again by the Hon. Josephine Roche, under-secretary of the Treasury in charge of public health, in a most challenging address. She began by pointing out that fifty years ago 94 per cent. of all mortality from disease was from acute illness, chiefly infections; to-day 75 per cent. of all mortality from disease is from chronic illness. Ten diseases take this toll of three out of four of our deaths. Listed according to the death-rates which they are responsible for they are: heart disease, cancer, pneumonia and influenza, cerebral hæmorrhage, nephritis, tuberculosis, diabetes, diarrhœa and enteritis, appendicitis, and syphilis. Moreover this mortality from chronic disease does not oppress all classes of the population with an equal weight. The death-rate from respiratory tuberculosis is seven times as great among unskilled workers as among professional workers; it is three times as great among the skilled as among the professional. Pneumonia kills three and a half times more unskilled workers than professional; death-rates from diarrhœa and syphilis are twice as high for the unskilled as for the professional; cancer's toll of the unskilled worker is 50 per cent. higher than of the professional. The death-rate from all causes is more than twice as high for the unskilled worker as for the professional. Two years ago a survey was launched to determine the degree of morbidity in a sample of the American population. Included in this investigation were 750,000 families comprising 3,500,000 individuals. The first results of tabulating the findings were made known by Miss Roche. We learn that disabling illness among persons on relief is 68 per cent. higher than among those in families with an annual income of $3000 or over; that the unemployed have twice the disabling illness that the employed have; that Works Progress Administration workers have a disabling illness rate 40 per cent. above that of other employed persons; that 1 in every 20 heads of families on relief is unemployed because of disability, while only 1 in 250 heads of families in the higher income groups is unemployed because of disability. If the load of sickness is unevenly distributed, so also is the aid afforded to those who bear it. Only 67 per cent. of the cases of disabling illness among relief persons received medical attendance exclusive of hospital care, compared with a figure of 80 per cent. for those with a family income of $3000 and over. The average medical services per case of disabling illness were about 50 per cent. higher in the highest income group than among persons on relief. Bedside nursing care in the home was given to less than 1 per cent. of the disabling illnesses among persons on relief; the proportion so attended in the group with family income of $3000 and over was 10 per cent.

"Concerted public action" under such conditions is inevitable. The only question, said Miss Roche, is whether the public health group "are going courageously and quickly to step forward and . . . offer all they can give in constructive and progressive leadership." This challenge was made even more pointed when the speaker recommended that the association formally recognise the problem of the present unequal distribution of medical services and charge a special committee "to coöperate with the public health service in extending through proper methods the long accepted functions of public health work to meet modern demands and needs of our people."

The association accepted the challenge and instructed its executive board to appoint such a committee. At the same time there was not wanting evidence that the public health organisation in various States is already responding to the modern need. Dr. Henry D. Chadwick, commissioner of health for Massachusetts, described how his State has made available to the medical profession a hospital and twenty clinics to which any doctor may bring or send his patient for free consultative service. At first 51·4 per cent. of all cancer patients were referred for diagnosis to the clinics. In the last two years, after eight years' operation of the plan, 77·3 per cent. of

all cancer patients have been so referred. The percentage of patients that come to the clinic without having first consulted a physician has dropped from 14·7 to 8·3.

CONTROL OF PNEUMONIA AND SYPHILIS

In his welcoming address Governor Herbert H. Lehman of New York State made reference to the programmes in that State for the control of pneumonia and of syphilis. The former programme has been in effect for only eighteen months but has already so well demonstrated its efficacy that on April 24th, 1937, the governor signed a Bill making available $400,000 to the department of health. With this aid "it soon will be possible to provide sera for the treatment of more than half of our pneumonia cases, and subsequent research should bring the total to nearly 100 per cent." New York's programme of syphilis control, touched upon by the governor, was described in greater detail by Dr. George H. Ramsey, assistant commissioner of health. He stressed the need for thorough organisation and tireless persistence in following up delinquent infectious cases. One patient first reported in 1931 has been visited 41 times because of delinquency. Another who acquired his chancre in January of the present year has already been visited 8 times. These are not rare instances. Supervision of such cases is necessary and demands the employment of more clerical and nursing personnel than is to be found at present in most local health departments.

As president of the association Surgeon-General Parran was succeeded by Dr. Arthur T. McCormack, the health commissioner of Kentucky. Mr. Abel Wolman, professor of sanitary engineering in Johns Hopkins University, was voted unanimously to the position of president-elect. Kansas City was selected as next year's meeting-place. In addition to the resolution mentioned above were resolutions supporting the Vinson Bill for the control of stream pollution, and a resolution soundly condemning the exercise of political patronage in the appointment of public health personnel.

DEATHS FROM ELIXIR OF SULPHANILAMIDE

Up to the time of writing there have been 18 deaths, 13 in Tulsa, Oklahoma, and 5 in East Saint Louis, Illinois, from a proprietary elixir of sulphanilamide. In all probability there will be more fatalities and as yet all of the facts are not available. It appears, however, that the principal symptom was anuria. The elixir responsible appears to be a solution of about 72 per cent. diethylene glycol and approximately 40 grains of sulphanilamide to the fluid ounce. It is well known that the solvent, diethylene glycol, possesses some toxic properties and it seems possible that the deaths from this elixir were due to the combined effects of the two substances. In any case, the combination seems to be responsible rather than the sulphanilamide, since at least one of the patients had received sulphanilamide tablets over a period of two weeks without any bad effects. Further investigations are in progress, but it seems already certain that the combination of sulphanilamide and aqueous diethylene glycol is an extremely toxic one.

LIVERPOOL HOSPITAL AMALGAMATION.—The four principal voluntary hospitals of Liverpool are to be amalgamated on Jan. 1st under the name of the Royal Liverpool United Hospital. The site of the new hospital, which is to cost £1,000,000, has not yet been chosen.

SCOTLAND

(FROM OUR OWN CORRESPONDENT)

DEHYDRATION AND ŒDEMA

Prof. W. T. Ritchie delivered a Honyman Gillespie lecture in Edinburgh a fortnight ago, his subject being Disordered Circulation of the Interstitial Fluid. He pointed out that 70 per cent. of the body-weight is water, 2½–3 litres daily being absorbed from the alimentary canal, 1½ litres as fluid and the remainder from the food. This fluid is distributed as follows: blood plasma, 5 per cent.; interstitial fluid, 15 per cent.; intracellular fluid, 50 per cent. The exchange between the blood plasma and the intracellular fluid takes place through the interstitial fluid, which may be regarded as filtered plasma with only a minute proportion of protein. The most important factor in the formation of the interstitial fluid is the hydrostatic pressure within the capillaries. As the colloid osmotic pressure within the capillaries is 32–35 mm. of water, the hydrostatic pressure must be greater than this to drive the fluid out into the interstitial spaces. It is at the arterial end of the capillaries that this condition is fulfilled; at the venous end, on the other hand, there is, as it were, a negative pressure and fluid is accordingly withdrawn into the capillaries from the tissue spaces. The colloid osmotic pressure depends on the total protein of the plasma, which in health is 7 grammes per 100 c.cm. The albumin fraction is 4·5 *g.* and the globulin fraction 2·5 *g.*

If fluid intake is insufficient, or there is excessive fluid loss, dehydration will result. Dehydration becomes serious when 6 per cent. of the total body-weight is lost, the danger being in the reduction of the blood-plasma volume. The depletion of the plasma is met by withdrawal from the reserve—the interstitial fluid. If this reserve is too heavily drawn on it can no longer supply the need, the plasma volume falls and the body cells are seriously deprived of fluid. This state of affairs is seen in the child suffering from excessive vomiting or severe diarrhœa. Every effort must be made to prevent severe dehydration, and the best method is often to give fluid by intravenous drip, by which 1½ litres may be given in 24 hours. Dehydration of long duration is met with in endocrine disorders such as diabetes mellitus, diabetes insipidus, and Simmonds's disease, while in thyrotoxicosis also much of the loss of weight is due to loss of water.

Œdema may be caused by an excess of interstitial fluid or by an increased permeability of the capillary walls. Dilatation of the capillaries and stasis of the blood are also important factors, and are responsible for anaphylactoid œdema. Nutritional œdema, in famine dropsy, is due to hypoproteinæmia from starvation, with lack of ascorbic acid as a subsidiary factor. Faulty diet may maintain dropsy of cardiac origin, and this should be combated by administration of ascorbic acid and sufficient protein.

Acute nephritis, said Prof. Ritchie, is a disease in which there is widespread capillary damage, of unknown ætiology. There is hypoproteinæmia, especially of the albumin fraction. In the first few days of the disease the diet should be restricted—1 litre of water, 2 g. of sodium chloride, and 30 g. of protein per day. In the nephrotic syndrome loss of albumin leads to hypoproteinæmia and severe dropsy; a high protein diet (130 g. daily) causes disappearance of the dropsy and great increase in urine output.

Cardiac dropsy results from increased intracapillary pressure and is therefore maximal in the dependent parts, but hypoproteinæmia is an additional factor, caused by malnutrition and loss of plasma protein into the serous cavities and in the urine. Fluid exchange and the circulation of the interstitial fluid is thus interfered with. The treatment of this type of dropsy is treatment of the failing circulatory system by rest, careful nursing, diet, and sleep. Digitalis is especially effective in auricular fibrillation with dropsy and a high ventricular rate. Restriction of sodium chloride and a liberal protein diet help to dissipate the œdema. The mercurial diuretics are most effective in promoting the speedy disappearance of cardiac dropsy.

THE PUPIL REACTIONS

In a second Honyman Gillespie lecture, given last week, Emeritus Prof. Edwin Bramwell spoke on the pupil reactions, with special reference to contributions made by the Edinburgh school. Perhaps the earliest scientific neurologist, he said, was Robert Whytt, who graduated from Edinburgh 200 years ago, held the chair of practice of physic, and, among many accurate observations on the reactions of the pupil, described the consensual reflex. In 1863 Sir Thomas Fraser, professor of materia medica, discovered the myotic action of physostigmine. Dr. Argyll Robertson, who was lecturer in diseases of the eye at Edinburgh University, introduced the extract of the calabar bean to ophthalmic surgery. In 1869 he described in the *Edinburgh Medical Journal* the sign which bears his name, the case being one (obviously of tabes) in which there was extreme miosis and no reaction to light, but a reaction on accommodation for near objects. In 1870 he reported four similar cases in which miosis was again stressed, perhaps because of his interest in this subject. His sign was for long regarded as diagnostic of syphilis.

The late Dr. Kinnier Wilson in 1921 maintained that miosis is not necessarily a part of the Argyll Robertson pupil, and gave examples of other diseases that cause loss of the light reaction. The most common site of lesions responsible for Argyll Robertson pupils is near the aqueduct of Sylvius, and the condition is probably due to sclerosis of the fibres of Meynert's decussation. Prof. Bramwell concluded by referring to yet another well-known Edinburgh alumnus, the late Dr. W. J. Adie, who described what may be called the Holmes-Adie syndrome in which there is loss of the light reflex and a "tonic pupil"—i.e., a very slow contraction on accommodation—sometimes associated with absence of tendon jerks. The syndrome is not due to syphilis and has been described more often in females; it is benign and has no associated symptoms.

IRELAND

(FROM OUR OWN CORRESPONDENT)

PENSIONS OF ARMY MEDICAL OFFICERS

DESPITE the arguments put before the Dáil by Dr. O'Higgins in the debate on the scheme for army medical pensions the Minister for Defence has refused to make any concession in the case of medical officers, and he has obtained the approval of the Dáil for the draft regulations. His attitude was, indeed, contemptuous, and was expressed in his remark that even if more money were available for pensions he would not give it to the doctors, since the 20 per cent. addition given to them was adequate. The position, as it is now, is serious, not only for the present medical officers—for whom it is tragic—but for the future of the Army Medical Service. The present officers cannot escape from the Service without the Minister's consent, and if they are permitted to retire they cannot leave the Irish Free State without his consent. As regards the future of the Service it is impossible to suppose that men of energy and capacity will be induced to enter a service in which there is no adequate provision for the future, a service which leads to an old age of privation. With a degradation of the quality of the personnel of the Army Medical Service it is the men of the Army who will suffer. It will then be no satisfaction to the country that the present Minister for Defence framed his regulations without consulting anyone with a knowledge of the conditions and remuneration of the medical profession, that he refused to listen to representations on the subject, and that he was able—with the usual help of the party whips—to get the approval of the Dáil.

The whole question of salaries and pensions for medical officers in the Government service is likely to come much before the public in the near future. It is not only in the Army that medical officers have to look forward to an inadequate pension. In another branch of the Government service, formerly much sought by men of ability, it is found difficult to attract any candidates, and vacancies have had to remain unfilled.

MEDICINE AND THE LAW

A Curiosity of Dental Benefit

IN Bynoe *v.* General Federation of Trade Unions Approved Society the Court of Appeal observed that the appellant doctor had a very real grievance though the judges found themselves unable to help him. Mr. Bynoe, a registered medical practitioner, has for the last 30 years confined his practice to dentistry as he is clearly by law entitled to do. But, owing to the dental benefit regulations, he cannot treat panel patients. The insured person who requires dental treatment normally selects a duly registered dentist. The scheme of national health insurance provides that the practitioner obtains his remuneration from the patient's approved society, not from the patient himself. The regulations prescribe that the dentists with whom the societies make arrangements for dental benefit shall be dentists whose names appear on the Dentists Register. Thus Mr. Bynoe, though qualified and legally entitled to practise dentistry, cannot receive remuneration from approved societies for giving dental treatment to insured persons; and the insured persons, who can get free dental treatment under the approved societies' arrangements, naturally do not indulge in the luxury of paying for private treatment. Mr. Bynoe's only legal remedy was to ask the court to declare that the regulations were invalid as being ultra vires. Mr. Justice Simonds felt unable to take this view last June (see *Lancet*, 1937, **1**, 1541) and the Court of Appeal is satisfied that he was right. The Master of the Rolls says there is no possible ground for suggesting that a regulation which confines dentists entitled to give dental benefit under the Insurance Acts to persons on the Dentists Register is ultra vires. He thought, however, that the effect of this legislation in Mr. Bynoe's case was very unfortunate. Lord Justice MacKinnon, who concurred, remarked that counsel

had not offered the court any reason why those who are entitled to practise dentistry on private persons should be excluded from the definition in the regulations.

The Chiropodist's Lamp

In dismissing an action for damages for the alleged negligence of a chiropodist, Mr. Justice Greaves-Lord paid a rather left-handed compliment to the value of the services rendered. A diamond broker, living in Maida Vale, was treated by a chiropodist employed by Strand Hotel Ltd. at the Regent Palace Hotel. He had apparently complained of a swelling on the upper part of his left foot. The chiropodist said that he applied warm towels and put on about an ounce of soothing cream consisting of vaseline, white wax, rose water, and borax. He then dipped a piece of cotton-wool in a weak tincture of iodine and squeezed two or three drops on to the cream, smeared it over the cream and applied a 32 candle-power lamp for a minute and a half at a distance of 12 or 14 in. from the foot. The patient contended that either the iodine or the lamp had caused his foot to become very painful and to look "like a piece of red meat." There was medical evidence that the treatment could not have had this effect. The lamp, said one medical witness called for the defence, was "mere eye-wash." The judge, after seeing the materials used by the chiropodist, the lotions and the lamp, was satisfied that they were not harmful. The lamp, he said, was simply part of the machinery of charlatanry used by some chiropodists, the use being due to the vanity of mankind. This method of making money out of the weakness and foibles of other people could not exist if it was harmful in any degree. The people who used this method were sure to use the most harmless means. These judicial observations on the lamp treatment administered by chiropodists ascribed its vogue to vanity. But does not the customer believe it to be of therapeutic value? In London and elsewhere there are, by local Act, restrictions on unlicensed establishments for massage, electrical, and other special treatments. Do they cover the treatment from which the diamond broker had expectations of relief and to which he afterwards attributed his injury?

GRAINS AND SCRUPLES

Under this heading appear week by week the unfettered thoughts of doctors in various occupations. Each contributor is responsible for the section for a month; his name can be seen later in the half-yearly index

FROM A SALARIED SURGEON

I

AFTER accepting, with some hesitation and more pride, an invitation to contribute a month's rations of "Grains and Scruples," I began to feel envious of the earlier contributors who were obviously men of great learning and experience. Like Vasco da Gama and Drake, they had the whole world before them—they could talk about anything they chose. And they were so thorough that the task of their smaller successors is like that of the present-day explorer who has to go a very long way before he can find what the old maps called terra incognita. There was really no need for the Editor of a centenarian journal to fire such big guns in the first round. We all know the new weekly that starts off with a big splash—articles by men of fame, a weekly contribution by some literary big-wig; but THE LANCET has no need for such tactics, and indeed, on reflection, it seems unlikely that it actually used them. A young sniper like F.R.C.S. 1936 probably provides no more than an occasional interlude before heavy artillery fire starts again.

While these thoughts were troubling me I approached, with due reverence, the Adelphic oracle, and told it what was in my mind. The answer that I received was both illuminating and reassuring, and I think I ought to give it for the encouragement of future contributors. It was something like this, "Don't worry, we don't expect you to be original. In any case, there is more than one way of saying the same thing, so don't hesitate to talk about subjects that have already been discussed." This is true enough; the same subject may be discussed in any number of ways. We see it every day. Tom hits Dick; Dick responds in some more or less appropriate way, and the onlooker, Harry, comments on the conflict and wonders whether he should hit anyone, and, if so, should it be Tom or Dick. The *Times*, the *Telegraph*, the *News Chronicle*, the *Daily Express*, and the *Daily Worker* are all presented with one and the same set of circumstances, yet how different are the reporting and the editorial commentary in each paper. There is plenty of scope for us still, even if we had only a limited range of subjects.

* * *

I choose Surgical Practice in England—because it concerns me, and scores like me, as much as anything else. We all know the system, or lack of system, peculiar to this country. The fun begins after the Fellowship has been passed and a registrarship obtained. The budding surgeon gets a good apprenticeship working with his chief, and at the same time looks round for minor appointments at lesser urban hospitals and cottage hospitals. In due course he collects an odd assortment of appointments, generally too many—but there is no one to stop him. One man I know is reputed to hold thirteen appointments in all. The day is spent in dashing round from one hospital to another, with an odd hour to see a reduced fee patient at the consulting-room, another hour at a nursing-home with another precious private patient or, more often, attending to patients under the care of his chief. And occasionally there may be a couple of hours in the evening for reading or writing, and perhaps half an hour for that most precious thing—contemplation.

As the young surgeon progresses, the game continues in much the same way. The smaller appointments, like pawns, are discarded, and the game is continued with larger pieces, with the main objective always in view—an appointment at the big teaching hospital where he is registrar. At about this time private practice begins to assume encouraging proportions, and, for the first time, the antinomy between the pursuit of surgery as a science as well as an art, and the allurements of consulting work becomes dangerous. Finally, if he is lucky, and almost always at well after forty, our hero is able to settle down to steady work in one or two good appointments. Something like continuity is now possible—

but what years of frayed and dissipated energy may have been wasted on the way.

* * *

Some of those who have made this journey (and one of its charms is its recurring excitement and uncertainty) are satisfied, but others, equally successful, are by no means sure that it is the best way. The general impression left by A London Surgeon in those excellent Grains and Scruples written in August, 1936, is that this time-honoured system with all its faults is, like so many British institutions, the best in the world. At any rate, the men are simply splendid.

I agree—they are—and it staggers me to see how they keep their balance and make useful contributions to medicine while working under such adverse conditions. Yet I am convinced that British medicine holds its high position in the world to-day, not because of, but in spite of this wasteful system. The junior man's useful contacts with his seniors are all too few. What he really does, so far as training is concerned, is to work out what he has picked up in the higher centres at the smaller hospitals where he is an independent surgeon. This may develop courage and resourcefulness, but is it altogether a good thing? And what I have called the minor hospitals suffer, too. I shall never forget a question I was asked when I applied for an appointment at a deservedly well-known hospital in an outer urban area, "If you are appointed, will you agree to remain for at least five years?" I said, "Of course, yes—but why do you ask?" It flitted across my young mind that perhaps the hospital had a skeleton in the cupboard—there seemed no other explanation for such a question. The real reason was that this hospital had learned the importance of continuity of service, and had no wish to see its medical staff continuing to come and go like domestic servants, as more attractive appointments fell vacant elsewhere.

It is, of course, obvious that the best men will tend to go to what they consider the best hospitals, and it may well be argued that the smaller hospitals are better off with good junior men who remain for a short time than with second-rate men who stay for ever. I don't know the answer to this riddle, but there probably is one, and I think the governing bodies of the smaller hospitals would like to learn it.

* * *

Until a man attains considerable seniority, this absence of continuity is the most distressing feature of our system. Take the simple example of the recording of cases. The only method open to the enthusiast is to copy out the notes of all cases that he is following and keep them at home. It is impossible to rely on the various systems of indexing (when they exist) at all the hospitals where he works. Then that precious thing—time. What hours are dissipated careering across the town and around the countryside. An energetic friend of mine had a map in his study with his various hospitals marked on it. Each hospital was surrounded by circles representing the times taken to get from the hospital to other points. With the help of this map his dutiful wife was able to tell an inquirer how long it would take her husband to get from wherever he was to where he was wanted next, and to arrange his appointments accordingly.

* * *

In all but the most elementary surgery, a certain amount of team-work is necessary both in the theatre and the wards. Many of us think that team-work in certain foreign centres has been carried too far, but it can never be anything but beneficial unless it diminishes the responsibility of the surgeon to the individual patient. Coöperation of this kind is based on intelligence and practice, and the more time a man spends working under one roof the more likely is he to obtain that team-work in and out of the theatre that is essential to the best work. The simile of an orchestra may be wearing thin, but it is difficult to improve on it. Let us suppose that Sir Henry Wood divided his time between an orchestra at Queen's Hall, another in Kensington, a brass band in Hackney, and an amateur orchestra in Croydon. He would probably get something good out of all of them, but he would not produce a series of concerts comparable with those that we have enjoyed during August and September. To carry the simile further—too many of us are compelled to perform in much the same way as these nimble artists who manage to appear at four or five cabaret shows in as many places in a single evening.

* * *

The element of competition is strong. This, human nature being what it is, is said to be the great strength of the system. At the centre there is a survival only of the fittest. The second-rate men stay, as they deserve, at the hospitals of lesser importance. The suggestion that whole time or nearly whole-time appointments would, by eliminating the waste that I have described, make for better or less hurried work is received with exclamations of horror. No, our physicians and surgeons would soon become lazy Whitehallian fellows, sinking into the intellectual torpor that an assured—even if modest—income begets. But it is curious, and pleasing, to see how fond these critics are of the dear old professor of pathology for whose learning they have profound respect; his youthfulness and energy have become a legend among the students. And the anatomist, too—a most useful man; the physiologist, well—perhaps he might be rather more useful if he remembered that physiology in a medical school should be essentially human, but a very good fellow all the same.

These men lead the cloistered lives that the practising surgeons and physicians abhor. Is there competition among these full-timers? Yes, lots of it, in a dignified academic way—and generally speaking, the best jobs go to the best men.

The competition argument falls to the ground.

INTERNATIONAL SOCIETY OF MEDICAL HYDROLOGY

THE fourteenth annual meeting of this society was held from Oct. 17th to 22nd at Frankfurt-am-Main and Wiesbaden, with an attendance of over 150 members and non-members representing 18 countries. At the opening ceremony at Frankfurt University Prof. H. Vogt, director of the Federal Institute of Medical Hydrology in Breslau, was elected president in succession to Prof. Alois Strasser of Vienna. The first discussion, on Bioclimatology, was opened at Frankfurt by Prof. F. Linke (Germany) and Dr. Milhaud (France), and the second, on Psychological Factors in Health Resort Practice, by Prof. O. Veraguth (Switzerland) and Dr. R. G. Gordon (Bath). The third discussion, held during a visit to Bad Ems, was on the Natural History of Moors and Muds, described and illustrated by Dr. W. Benade (Germany) and Prof. C. Porlezza. Other papers on

peloids were read, and the committee which has been working on the standardisation of data concerning these semi-solid bath media presented its final report. This, with accounts of the meeting, will appear in the January *Archives of Medical Hydrology*.

The participants stayed throughout at Wiesbaden, travelling by motor-coach to Frankfurt, Bad Nauheim, and Bad Ems for the meetings and visits there. At Nauheim both the State and the Kerkhoff research institutes were visited. At the former, listening-in to heart sounds, correlated with cardiographic records, by means of a microphone, amplifier, and loud-speaker, was demonstrated by Prof. Weber. Prof. Clothilde Gollwitzer-Meier lectured on the work performed by the heart in the bath, and Prof. Boehm followed with kymographic records of the movements of the heart and its variations in size in and after CO_2 baths. Other laboratories visited included the municipal research institute (at the same time a spa hospital) in Wiesbaden and the State institute for investigation and treatment of catarrhal and asthmatic conditions at Bad Ems.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

A NEW Order in Council sanctions the payment of specialist allowance to surgeon commanders, irrespective of whether or not they are employed solely on specialist duties.

Surg. Capt. E. MacEwan, O.B.E., to *Boscawen* for R.N. Hosp., Portland.

Surg. Comdrs. G. E. Heath to *Victory* for R.N.B.; R. R. Baker to *President* for course; and A. de B. Joyce to *Birmingham*.

Surg. Lt.-Comdrs. T. A. Cochrane and L. P. Spero to be Surg. Comdrs.

Surg. Lt. G. S. Thoms to *Faulknor*.

Surg. Lt. (D) H. C. Brewerton to *Shropshire* (on commg.).

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Lt. K. E. L. Yuill to *Resolution*.

Surg. Lts. to be Surg. Lt.-Comdrs.: J. C. Moor and R. D. Jenkins.

ARMY MEDICAL SERVICES

Col. J. P. Lynch, late R.A.M.C., retires on retd. pay.

Lt.-Col. W. Mathieson, O.B.E., from R.A.M.C., to be Col.

Col. Mathieson is medical officer at the Army Technical School for Boys at Beachley Camp.

ROYAL ARMY MEDICAL CORPS

Maj. J. R. N. Warburton, M.C., to be Lt.-Col.

Maj. W. E. K. Coles retires on retd. pay.

Capt. D. C. McC. Ettles to be Maj. (provl.).

TERRITORIAL ARMY

Lt. G. D. Stilwell to be Capt.

Capt. F. K. Bush, R.A.M.C., to be Divl. Adjt., Lond. Div. and Sch. of Instruction, vice Capt. D. C. McC. Ettles, vacated.

Lt.-Col. C. H. Budd, M.C., T.D., M.B., to comd. the 1st (Eastern) Gen. Hosp.

H. J. Green (late Offr. Cadet, Aberdeen Univ. Contgt. (Med. Unit), Sen. Div., O.T.C.) to be Lt.

Supernumerary for Service with O.T.C.: Capt. W. L. Lamb to be Maj.

ROYAL AIR FORCE

Group Capt. F. N. B. Smart to Headquarters, Training Command, Market Drayton, for duty as Deputy Principal Medical Officer.

Flight Lts. J. C. Blair to No. 223 (Bomber) Squadron, Nairobi, Kenya; P. A. Cooper to Aircraft Depôt, Karachi, India; and R. C. O'Grady to No. 31 (Army Coöperation) Squadron, Karachi, India.

Flying Offrs. J. P. Brazil to No. 4 Flying Training School, Abu Sueir, Egypt; and H. O'B. Howat to No. 47 (Bomber) Squadron, Khartoum.

Dental Branch.—Flight Lt. A. J. S. Wilson to No. 1 Flying Training School, Leuchars.

Flying Offrs. F. V. Frank is transferred to the Reserve, class D; N. L. Newman to No. 1 School of Technical Training (Apprentices), Halton; and G. W. Hargreaves to No. 1 R.A.F. Depôt, Uxbridge.

AUXILIARY AIR FORCE

No. 605 (County of Warwick) (Bomber) Squadron: Squadron Leader J. S. Jerome, M.C., relinquishes his commission on completion of service and is permitted to retain his rank (substituted for notice in THE LANCET of Sept. 4th).

INDIAN MEDICAL SERVICE

Lt.-Col. S. A. McSwiney retires.

Majs. to be Lt.-Cols.: S. N. Hayes and D. R. Thapar.

D.A.D.P. (vacated).—Maj. W. H. Carter, R.A.M.C.

D.A.D.P. (appointed).—Capt. B. Blewitt, R.A.M.C.

Capts. to be Majs.: S. S. Bhatnagar, B. Chaudhuri, H. L. Batra, A. V. O'Brien, S. T. Davies, L. Dass, S. M. K. Mallick, T. C. Puri, C. Mani, R. R. Bakshi, E. S. S. Lucas, and H. W. Farrell.

Lt. K. I. E. Macleod is restd. to the estabt.

Lts. to be Capts. (Temp. Commn.): M. Akram, D. S. Raju, B. S. Bindra, M. S. Chadha, W. A. Mirza, and M. M. Gyi.

To be Capts. (on prob.): Patit Paban Chowdry, M.C., Shiv Parshad Bhatia, Man Singh, and Mir Naeem Mahmood.

Indian Medical Department.—Lts. (Sen. Asst. Surgs.) to be Capts. (Sen. Asst. Surgs.): A. D. Campbell, G. W. Doyle, G. H. Lawrence, C. M. E. Warner, J. M. Rodrigues, M.C., and E. M. Cuzen. Asst. Surgs. (1st Cl.) to be Lts. (Sen. Asst. Surgs.): J. M. Richardson, M.B.E., J. E. Howard, J. C. Dyer, V. W. A. Emile, W. C. Ne'Roy, O. R. C. Freeman, M.B.E., E. R. Grant, and C. A. A. Emile. Lt. (Sen. Asst. Surg.) R. L. Dunn retires.

THE LANCET 100 YEARS AGO

November 4th, 1837, p. 206.

From a leading article.

To our medical readers we need not present any observations on the case of JAMES JEWREY. The facts speak for themselves. To the mind of the general reader we may briefly recall the circumstance of a man presenting himself to an hospital, for the relief of an accident consisting in the rupture of the urethra, or of the canal through which the urine is discharged from the bladder, and of being dismissed from that hospital without any attempt being made to relieve him. An accident of this kind often admits of prompt and easy relief; an instrument is passed into the bladder for the purpose of supplying, as it were, the place of the injured canal, and of permitting Nature to effect a cure by closing up the wounded part; the action of the urine, a highly irritating fluid, upon the surrounding parts, is thus prevented, and, with a few additional precautions, a complete cure is, in very many instances, effected. This treatment is simple; it does not require the exercise of any superior surgical skill; it would not, in the case under consideration, have been attended with any great trouble, or loss of time to the surgeon, even were we to suppose that the time and talents of the medical attendant in an hospital are not, *de jure*, at the service of all the patients who are brought there under circumstances of pressing danger. But, instead of lending that aid which, though trifling in appearance, might probably have saved a human life, the surgeon only orders the application of a few leeches; but there are no leeches in the hospital; so the unfortunate sufferer is dismissed, and left to his fate. The effects of this conduct are not long in manifesting themselves; the urine, which continued to escape through the ruptured part of the canal, produces, as it always does, violent inflammation of the surrounding parts, and the man subsequently dies in another hospital, after having suffered excruciating torture for three-and-twenty days. This is a plain, unvarnished history of the case, divested of technicality. We offer it, with little comment, for the reflection of the public, and those few individuals amongst our professional brethren who may still deny the necessity of reform in hospitals and other institutions destined for the reception of the poor and indigent sick.

CORRESPONDENCE

ASSESSMENT OF PSYCHIATRIC TREATMENT

To the Editor of THE LANCET

SIR,—The article by Dr. D. Curran in your last issue is of great interest to all engaged in the practice of psychological medicine. He raises the question of the efficacy of "intensive psychotherapy" as compared with shorter and simpler methods of treating the minor forms of mental ill health that present so large and difficult a problem to the medical profession.

There exists at present a very wide divergence of opinion as to the relative value of these methods amongst practitioners of psychological medicine. It is, however, possible that this disagreement is largely due to the fact that the upholders of each school of thought tend to see the clinical failures of the other. Clinics and hospital departments where short methods are used receive patients who have derived little or no benefit from prolonged courses of intensive psychotherapy. On the other hand, institutions specialising primarily in intensive methods receive a number of patients dissatisfied with and unimproved by short methods of treatment.

These facts, if looked at from a constructive point of view, show that the practice of psychological medicine might be advanced by pooling our knowledge and coöperating in the interchange of patients between institutions organised for the provision of different forms of treatment.

Dr. Curran very wisely emphasises the importance of careful selection of cases for different forms of treatment, and it is in this difficult matter that knowledge is at present inadequate. A great advance will have been made when we can arrive at some generally accepted criteria indicating that certain cases must of necessity receive intensive treatment, while others will respond to less laborious and expensive methods. Although there are undoubtedly a number of patients who do not respond to any of the methods at present known in psychological medicine, mistakes in selecting the right method for the particular case must be responsible for many of the "failures." The friendly exchange of information and opinions about such cases will help us to avoid a repetition of similar mistakes in the future.

It is important that intensive psychotherapy should only be used when clinically necessary, just as major surgical procedures are not employed without definite indications. Dr. Curran's encouraging results support the value of short methods in certain cases, but unfortunately he gives no description of the actual therapeutic measures used in his series of patients, and it is therefore impossible to compare them with those which are being tried elsewhere.

With a view to increasing knowledge of the efficacy of these shorter methods the Tavistock Clinic has established the policy of giving certain selected cases a course of treatment not longer than six interviews. Some broad criteria have been tentatively laid down for the selection of suitable cases.

1. The symptoms should represent reactions to definite emotional stress rather than an expression of abnormal character traits. They should arise from a single source of emotional conflict rather than a number of deep underlying factors.

2. The patient should exhibit an active rather than a passive pattern of reaction towards life.

3. The degree of narcissism should not be pronounced.

4. The patient should not show signs of psychosomatic immaturity.

These criteria are regarded as more important than the duration or severity of the symptoms in selecting cases for "short" rather than "intensive" psychotherapy. The form of therapy chiefly used is straightforward explanation to the patient of the mechanism of his symptoms together with deliberate reassurance and encouragement.

In order to be successful in selecting cases and applying such treatment a sound knowledge of psychopathology and psychiatric experience are equally important. The former enables one frequently to form a quick and accurate estimate of the psychological mechanisms underlying the symptoms, and the latter to distinguish psychotic types where lack of insight and incapacity for coöperation preclude success from any form of psychological approach, and show that physical or environmental measures are indicated.

The points mentioned in this letter are not regarded as conclusive but are brought forward as a contribution towards the solution of difficult problems. Knowledge should rapidly increase if close coöperation could be arranged between workers in different institutions practising for the most part somewhat different methods. This type of coöperatve inquiry is being applied with some success in the treatment of cancer, standard records and follow-up systems having been adopted by many hospitals. It would be of immense value if a number of institutions and hospital departments responsible for the treatment of minor mental illnesses could combine to work out a scheme on similar lines. I extend an invitation to Dr. Curran, if he thinks that such a plan would be worth while, to join in its initiation.

I am, Sir, yours faithfully,

Tavistock Clinic, W.C.1, Nov. 1st. MARY C. LUFF

THE ARCHES OF THE FEET

To the Editor of THE LANCET

SIR,—I must thank Mr. Wiles for his very courteous and interesting criticism of my views upon the arches of the feet; I am sure that many would have been much more scathing in their remarks. The article in question was but the briefest of summaries of a lecture which in itself was no more than a short résumé of the subject. It is not to be wondered at, therefore, that my arguments have failed to impress Mr. Wiles, and that he hopes to convince me of their falsity. In my book "The Foot" I have dealt with the subject more extensively than is possible in a single article or lecture and those who are interested will find the arguments laid out in greater detail there. I do not propose to occupy your space by repeating them now, but there is one important point which Mr. Wiles's letter introduces that, I think, needs further discussion. It seems clear to me from the various opinions which I hear expressed that a considerable degree of misunderstanding arises from the fact that we have no definition of what we mean by the "arches of the feet" and, therefore, no criterion of what constitutes a flat foot. Thus Mr. Wiles speaks of the complicated rotary movement at the subastragaloid joint and says that when the foot is adducted and inverted the arch is necessarily raised. As a corollary one may add that when the forepart of the foot is abducted and everted the arch apparently falls. An arch, however, is no more (or less) an arch because it is raised (or lowered) upon pillars at its extremities, and that, in effect, is what inversion (or eversion) does.

I have for long thought that the discrepancy of opinion in this matter may to some extent be due to ambiguity in the meaning of the terms used, and that the two schools of thought may actually be referring to slightly different functions and structures. With my foot off the ground I can perform the various movements which Mr. Wiles describes, and the apparent curve of the inner border increases and decreases correspondingly. But, when I stand upright upon one foot I can perform none of these movements. The gravitational forces are now so great that the ligaments are kept taut and the joints held so tightly together that the muscles are incapable of moving them. Nevertheless I can still observe a well-marked arch along the inner border, and I know from trial in many hundreds of cases that this arch cannot be obliterated by the abolition of all muscular activity under spinal anæsthesia. This is the arch which I believe to be an architectural feature of the foot, not dependant upon muscular tonus.

I feel sure that if further discussion of this subject is to be fruitful we must distinguish carefully between the movements of adduction and inversion, and abduction and eversion, which are obviously postural in nature, and the curve which remains when these opposing movements are in perfect balance and the foot assumes a medial position. A study of the internal architecture of the bones of the foot shows that the lines of stress and strain run along this curve, and should convince anyone that it is a permanent structural feature.

I apologise for occupying so much space over such a trivial point, but the misunderstanding is one which I think I can detect in many recent writings on this subject.

I am, Sir, yours faithfully,

Welbeck-street, W., Oct. 29th. NORMAN C. LAKE.

APLASTIC AND ACHRESTIC ANÆMIAS

To the Editor of THE LANCET

SIR,—In an article on bone-marrow in your issue of Oct. 23rd, Dr. A. F. Zanaty mentions "a group of aplastic anæmias with hyperchromia, which . . . corresponds with Wilkinson's description of achrestic anæmia," and he states that this group shows marrow which is "macroblastic" in contrast to the megaloblastic marrow characteristic of pernicious anæmia.

We described achrestic anæmia as a moderately megalocytic anæmia characterised by (1) the presence of free HCl in the gastric juice; (2) failure, often not at first complete, to respond to anti-anæmic liver treatment; (3) the presence of adequate quantities of the anti-anæmic principle in the liver; and (4) a megaloblastic hyperplasia of the marrow—the state of the marrow, both naked-eye and microscopic, was illustrated in our article in the *Quarterly Journal of Medicine* in 1936. We quite agree that the first three points may be found in several anæmias including Dr. Zanaty's group, but only achrestic anæmia shows the fourth point and if Dr. Zanaty's cases do not show megaloblastic hyperplasia of the bone-marrow they do not correspond to our description of achrestic anæmia.

The megaloblast is a perfectly distinct cell which has been described by numerous writers and has recently been well illustrated in the monograph on sternal biopsy by Nordensen (1935) and by Dameshek and Valentine (1937); we are not certain what Dr. Zanaty means by "macroblast" but we assume that he means a large normoblast. Now in every hæmatological clinic of any size some cases have been discovered which resemble aplastic anæmia of a chronic type but whose marrow is nevertheless active; they are described in recent hæmatological text-books and have been named "pseudo-aplastic" or "aregenerative" anæmias—we have seen several patients with this condition. Clinically they may resemble pernicious or achrestic anæmia, but the marrow does not show the predominantly megaloblastic hyperplasia of the latter conditions; instead, normoblasts of all types of maturity are common and some earlier cells (erythrogones) may be seen, true megaloblasts are at the most infrequent. These patients have an anæmia which is often hyperchromic at some point in their course, and we have little doubt that they represent Dr. Zanaty's group of "aplastic anæmia with hyperchromia." It is a somewhat heterogeneous group which cannot yet be satisfactorily classified.

In our experience a patient with a severe hyperchromic anæmia who does not respond to the treatment for pernicious anæmia has usually one of four conditions: (1) true aplastic anæmia; (2) "pseudo-aplastic" anæmia; (3) aleukæmic leukæmia; and (4) achrestic anæmia. Sternal biopsy distinguishes between these: in (1) the marrow is fatty and the cells relatively few; in (2) cells are numerous, the red cell types being mostly normoblasts of various types with perhaps a very few erythrogones or even megaloblasts; in (3) the marrow is packed with immature leucocytes; and in (4) there is a megaloblastic hyperplasia like that of pernicious anæmia. Probably pseudo-aplastic anæmia is the commonest and achrestic anæmia the least frequent of these cases but all are very rare; in over 2000 patients with blood diseases, the number seen with any one of the above conditions did not exceed 10.

In discussing leukæmias, Dr. Zanaty states that the oxidase stain is essential to avoid confusion between myeloblasts and lymphocytes, and he regards the presence of oxidase-positive granules as significant of the former. But it is 24 years since Prof. Shaw Dunn pointed out that the most primitive cells of the myeloid series did not react to the oxidase stain, and subsequent investigators have confirmed this finding; along with others, our experience (see Israëls 1936) indicates that myeloblastic leukæmia with *oxidase-negative* myeloblasts is the commonest form of this leukæmia.

We are, Sir, yours faithfully,

JOHN F. WILKINSON,
M. C. G. ISRAËLS.

University of Manchester, Oct. 28th.

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Dunn, J. S. (1913) *Quart. J. Med.* **6**, 293.
Israëls, M. C. G., and Wilkinson, J. F. (1936) *Ibid*, n.s. **5**, 69.
— (1936) *Acta med. scand.* **89**, 124.
Nordensen, N. G. (1935) Studies on Bone Marrow from Sternal Puncture, Stockholm.

To the Editor of THE LANCET

SIR,—The article by Dr. A. F. Zanaty on Sternal Puncture of the Bone-marrow in your issue of Oct. 23rd seems to call for some comment, as the method is stated to be in routine use in some clinics. The first point that I would make is that *blood* is withdrawn and not as in some other procedures a portion of the marrow itself. It is, therefore, impossible in any given case to know whether a cell as observed in the film is free in the blood or detached from the marrow itself and the proportion of marrow cells—if any—in the mixture is unknown. The examples quoted bear this out. Furthermore, few hæmatologists of experience would, I think, agree that the bone-marrow is difficult to stain or that in sections it is "impossible"—I would add "or

difficult "—to distinguish between a myeloblast and a megaloblast or a lymphocyte and a normoblast. In practice it is, I submit, seldom necessary to examine the marrow, as the necessary information can be obtained by *repeated* scrutiny of the peripheral blood, but when one does make a biopsy it is necessary to be sure that one is dealing with the marrow itself.

I am, Sir, yours faithfully,

A. KNYVETT GORDON.

Bedford-square, W.C., Oct. 29th.

CHRYSOTHERAPY

To the Editor of THE LANCET

SIR,—I should like to confirm the results of Prof. Hartfall and his co-workers. Since 1931, at my various rheumatic clinics, I have used gold as a method of treatment; originally with blood sedimentation as a criterion of cure but later this was found unnecessary. From this experience of seven years and several hundred cases I am certain that gold is the best single method of treatment.

My colleagues and I were the first in this country to record results (in your own columns in January 1934) and we then tried to differentiate the types for which we found it useful. These have remained substantially unchanged, but with new preparations our technique and dosage has been modified. The points to stress are:

1. We never give more than 0·1 g. at a single dose.
2. The sensitivity of patients is first ascertained by a trial dose of 0·02 g.
3. 0·1 g. of a preparation such as Solganal B contains about one-third more gold than Oleosanocrysin. In estimating dosage with various salts this point must be emphasised.

With regard to sulphur content, I am certain that it is gold and not sulphur that produces the effects. This was discussed in detail by Forestier, to whom this form of therapy is so much indebted, at the meeting of the Ligue française in 1933. I have found that toxic reactions are less when colloidal sulphur is taken by mouth in drachm doses. In our series, which we hope to publish soon, we have had no deaths and very few untoward manifestations. With the new preparation, which is a calcium gold preparation containing a lower amount of gold, so far we have had none at all.

It is essential, as in the case of syphilis, to insist on several courses. We use three courses with intervals of four to six weeks in between, and aim at giving three grammes of gold. It follows that those preparations which contain a smaller amount of gold will need longer courses. As Prof. Hartfall and his colleagues point out, the fact that occasionally treatment with arsenicals or quinine has untoward results is no contra-indication for their general use. In this respect, it is worthy of note that where gold is used in the treatment of tuberculosis, the doses given are much larger and reactions seem to be less frequent.

I endorse Prof. Hartfall's and Dr. Hetherington's view of vaccine therapy. It must be remembered that this is empirical also, as no organism has yet been discovered in association with rheumatoid arthritis that fulfils even one of Koch's postulates. In my experience, they have been frankly disappointing. Like Prof. Hartfall, I have had cases to which they have been given long trial without effect, the same cases having later responded to gold. I think that Dr. Warren Crowe confuses the issue by combining the two treatments. It must be remembered that rheumatoid arthritis is a very common and disabling disease. Experience teaches us that physical methods tend to be alleviating rather than curative.

From the large amount of experimental work, numbering many thousands of cases done here and on the Continent, the value of gold is proved clinically beyond doubt. Like that of the Wassermann reaction, its specificity, while certain, is difficult to explain. If given in small doses it has as little danger as an arsenical, while the relief obtained in a progressive disease is often great. Perseverance is essential, and an initial painful reaction must not deter from continuing the course. Many of our best results have had exacerbations of pain during treatment.

I hope to publish soon a further series of cases with details of the pharmacology, but would say at once that I have found it of value in allaying pain even in osteo-arthritis. My best results have been obtained by combining gold with suitable physiotherapeutic treatment. I can emphasise this the more strongly as, in many cases, physical methods alone have been ineffective.

I am, Sir, yours faithfully,

Harley-street, W., Oct. 30th. GERALD SLOT.

To the Editor of THE LANCET

SIR,—I must apologise for trespassing once more upon your space, but there are two points in the letter of Prof. Hartfall, Dr. Garland, and Dr. Goldie which call for further elucidation. The first of these is diagnosis and nomenclature. The classification used by them—that of the British Medical Association committee in 1933—was later modified by the sub-committee on classification and published in the first report (1935) of the British Committee on Chronic Rheumatic Diseases. Here (p. 33) a clear distinction is drawn between "focal arthritis" or "chronic infective polyarthritis" and "rheumatoid arthritis."

The essential and pathognomonic differences are found in the radiographic, biochemical, and pathological changes (pp. 35–36). Still greater precision is obtained by the standard radiogram of the hand [1] and the differential sedimentation test (D.S.T.).[2] In fact with the routine use of these, no mistakes in diagnosis should be possible, since the differences between rheumatoid and focal arthritis are clear-cut and distinct.

Focal arthritis (the secondary rheumatoid of the earlier classification) is the disease to which I referred in using the term "active infective arthritis": "infective" because the expression is more commonly used and a focus is not invariably to be discovered, "active" since "infective arthritis" unqualified would seem to imply that some forms of rheumatic arthritis are non-infective. I cannot subscribe to the view that there is any form which is entirely without an infective factor.

It certainly makes for simplicity to combine rheumatoid and active infective arthritis in one group as is done by Prof. Hartfall and his colleagues, but the results of so doing may be disastrous. In rheumatoid arthritis, foci of infection must not be touched, for the disease may be made so much worse that ground thus lost may take years for recovery, or may never be recovered; whereas in active infective arthritis, foci of infection should be radically treated at an early stage.

Secondly in regard to the question of a control series of cases, I entirely agree with Prof. Hartfall that the downward course of either rheumatoid arthritis or active infective arthritis under the usual haphazard treatment is in itself sufficient. It seems

[1] Radiological Atlas of Chronic Rheumatic Arthritis (The Hand). By S. Gilbert Scott. London. 1935.
[2] Charterhouse Rheumatism Clinic, Original Papers, Vol. I. London. 1937.

to me also to be ethically quite untenable to *withhold* from a number of people a treatment which will do them good.

Far more important is the control of the treatment during administration. The D.S.T. is an extremely delicate gauge. Its use in every case would go a long way to convince the profession of the claims of gold, as it has established without any doubt the success of vaccine. The blood sedimentation-rate is a very insecure guide as compared with the D.S.T., which enables one to decide with ease whether a case is improving or getting worse.

One word as to the question of the sulphur constituent of the gold salts. This is being tried out at the Charterhouse Clinic where a preparation now in use has no sulphur, even in the acid radicle. It is the succinamide of gold prepared for us by British Colloids Ltd. That this has some effect is certain. It appears to differ only in degree from that of solganal B oleosum.

In reference to Dr. Hetherington's letter, I note that his gold dosage differs widely from that of Prof. Hartfall and his colleagues, just as the dosage recommended in vaccine therapy differs greatly between practitioners of that method. It seems a pity that workers in the same field cannot get together and, by pooling their results, establish the best methods and standardise the technique. Nor should anyone condemn as useless a form of treatment without making himself familiar with the method of those who have proved it successful.

In conclusion, I would like to point out that the technique and the results of vaccine treatment, as of all methods in use at the Charterhouse Rheumatism Clinic, can be seen by any medical man who is sufficiently interested in the subject to attend the sessions. I am, Sir, yours faithfully,

H. WARREN CROWE.

Harley-street, W., Nov. 1st.

"MY POST-BAG"

To the Editor of THE LANCET

SIR,—It is easy to sympathise with M.P.S. Honestly assured that his firm is doing its bit in the facilitation of efficient therapy he cannot understand why we do not welcome his representatives and circulars bearing the glad tiding of a new biochemical product. It is not his fault that we do not. His circulars, we may be sure, are as flawless as the manners of his representatives. The trouble lies much deeper, and it is this.

His firm is only one of, say, ten, all "specialising in biological products," all pouring out hormones, organ and tissue extracts and vitamin concentrates (in vast profusion and in almost unbelievable combinations), antiviruses, vaccines (plain, detoxicated, dissolved and to be taken with a drink of water after meals), bacteriophages and many other things. Not content with biochemistry many of the same firms diligently devise new barbiturates and ingenious modifications and ornamentations of Blaud's pill. Each firm has satisfied itself (though their criteria of satisfaction vary a little) "that the product will accomplish the purpose for which it is intended," and it only remains to draw attention to it. So first each firm gives its product a name, hoping to distinguish it from the similar products of the other nine, but since ten names for one product are hard to invent and harder still to remember that hope is in vain, we cannot remember one of them. Next they give it some small distinguishing feature which they emphasise hopefully, but again ten small distinguishing features cancel out. Never mind. The research has been done, the distinguishing feature and the portmanteau name devised, the ammunition is ready, the bombardment can begin. And it does.

There is firing on six days a week throughout the year. The light stuff comes through the letter box. Heavies in the shape of "our representative" penetrate the defences at uncertain intervals. The target is struck by one missile or another many hundreds of times a year. The reactions of individual targets differ, no doubt. Some may enjoy it, some, as men will in a bombardment, close their senses to it all and are only slightly bothered and confused. But some are exasperated. Factors in their exasperation are (1) Humiliation. "I suppose we have brought this on ourselves but I hate to admit it." (2) A painful conflict between the duty of using the winnowing fan and the desire to burn the lot—grain, chaff and all. (3) An unpleasant shaking of the individualist creed. "If these are the fruits of commercial enterprise perhaps, after all, the State had better control the means of production." (4) Simple anger at being caught up willy nilly in this tangle of fantastic names, incomprehensible formulæ, pretentious theories, and scientific jargon.

The outcome is an almost insuperable reluctance to use any biochemical product and a tendency to return on every possible occasion to the unassertive and sober remedies of the British Pharmacopœia.

The remedy (if there be one, short of a revolution in the affairs of the State) lies with the manufacturers considered as a body. Meantime some of us wish that the P.M.G., while giving us back our penny post for letters, would recoup himself by charging three-halfpence at least for commercial printed matter.

I am, Sir, yours faithfully,

Oct. 27th. G.P.

To the Editor of THE LANCET

SIR,—May I trespass once again on your space in order briefly to reply to Postman's Friend, who so kindly answered my two questions and incidentally asked seven himself.

In my letter I attempted to justify the advertising of pharmaceutical specialties through the post. It was against advertising matter and "bits of blotting-paper" that Postman's Friend originally protested. He now concentrates his attack upon samples for clinical trial and here I am in complete agreement with him. Such clinical samples are, except in a few special cases, worse than useless and I have never "let my firm in for the colossal cost" of sending them out.

To return to printed advertising matter, however, Postman's Friend says he has never met a medical man "who does not throw in the wastepaper basket all advertisements, of whatever kind, as soon as they are revealed as advertisements" (the last few words are, perhaps, a tribute to cunning presentation, an advertisement for, say, synthetic senna pods—bigger, stronger, better—masquerading innocently as an income tax assessment form). He must move in medical circles of an austerity far above the average because I can assure him that every day my firm receives a number, and in the course of a year several thousands of letters from medical men ordering our products and making reference to our advertisements.

This form of advertising is not a waste, it produces results and these letters are the proof of it.

I am, Sir, yours faithfully,

Oct. 30th. M.P.S.

KETONÆMIA IN INFANCY

To the Editor of THE LANCET

SIR,—Some sentences at the end of Dr. Gray's interesting paper published in THE LANCET last week, suggest that he has used Rothera's nitroprusside test for detecting acetone in urine, and ferric chloride for detecting aceto-acetic acid. Rothera [1] did at first say that his test was not given by aceto-acetic acid, but Hurtley [2] showed that this was due to an error in the preparation of the aceto-acetic acid and Rothera confirmed this. Actually acetone can be detected in a dilution of 1 in 20,000 whereas aceto-acetic acid can be found in a dilution of 1 in 400,000 with Rothera's test. Ferric chloride is much less sensitive as aceto-acetic acid can only be detected in a dilution of 1 in 14,000 and acetone gives no colour reaction. Embden and Schliep [3] and Folin [4] have shown that acetone is either absent or only present in small amounts in freshly passed urine, but does appear in urine which has stood for some hours. The common expression acetonuria is therefore a misleading one and should be replaced by ketonuria.

I am, Sir, yours faithfully,

Harley-street, W., Nov. 1st. GEORGE GRAHAM.

THE MEANING OF "EXAMINED"

To the Editor of THE LANCET

SIR,—Your answer (p. 992) to my question is, of course, the one that in practice is accepted by all panel practitioners, for the simple reason that none other is possible. I mean to say that unless the number of doctors were multiplied by ten, and each supplied with a staff of assistants, nobody could get through his work. At the same time, I do not think that such latitude in the definition of the word *examined* would be found in any dictionary.

Under the National Health regulations the authorities are sticklers for the letter. Why should not the same emphasis be laid on the fact of examination as on the date? If I see a man whose leg I have put up in plaster-of-Paris hobbling along on crutches in the distance on a particular day (on which his certificate is due), I am satisfied he is unfit for work; but does a distant view constitute *examination*? It is sheer humbug to say it does.

The printed wording of the certificate forms should be altered. In a case under the N.H.I. Acts it is the letter, not the spirit, that counts in the decision whether a panel doctor has to be fined or not.

I am, Sir, yours faithfully,

Ledbury, Oct. 26th. LESLIE B. C. TROTTER.

PUBLIC HEALTH

The Dysentery Outbreak at Luton

ON August 18th last the attention of the public health department of Luton, Bedfordshire, was drawn by a local practitioner to a number of cases of enteritis which had characteristics of food poisoning. A circular letter addressed to local practitioners elicited information suggestive of a widespread infective enteritis, and they were reminded of their statutory obligation to notify such cases. Up to Oct. 9th 302 cases were brought to the notice of the department, 189 of which were notified as dysentery. We are indebted to Dr. F. Grundy, medical officer of health for Luton, for details of the outbreak, which according to the results obtained from a random sample of the population affected a much larger number of cases than those actually notified. The peak of the outbreak occurred in the first 2 weeks of September, and by the second week of October the incidence had reverted to negligible proportions. The age-groups chiefly affected were 1–5 and 20–40.

The usual symptoms were vomiting and diarrhœa for two or three days, sometimes with abdominal pain, and generally with a brief pyrexia. Mucus and blood were seen in a few of the stools. The only death occurred in a child of 5 months, the diagnosis not having been confirmed bacteriologically. Of the 118 cases investigated by sampling, 64 were mild (ambulant), 44 moderate (bed for 24 hours or less), 9 severe (bed more than 24 hours), and 1 intermittent.

A non-lactose fermenting organism was demonstrated in 87 out of 155 specimens of fæces received for examination. An organism giving the reactions of *B. dysenteriæ* Sonne was isolated in 45 out of 56 non-lactose fermenters investigated.

The sanitary action taken included the disinfection of soiled bedding and clothing, the instruction of those in charge of patients on the disinfection of stools, advice to adult patients employed in handling food to remain off work, and the admission of four cases in all to the Borough Isolation Hospital. School-children were excluded until they were certified fit, and contacts of school age were excluded for a week. No specific article of food could be identified as responsible for the outbreak and no evidence of contamination of water was discovered. The prevailing condition in this outbreak did not conform to the accepted clinical picture of dysentery, and the result of agglutination tests with convalescents' serum suggested that the outbreak was not bacteriologically homogeneous.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED OCT. 23RD, 1937

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 0; scarlet fever, 2705; diphtheria, 1706; enteric fever, 36; pneumonia (primary or influenzal), 734; puerperal pyrexia, 191; cerebro-spinal fever, 17; acute poliomyelitis, 27; acute polio-encephalitis, 3; encephalitis lethargica, 5; dysentery, 69; ophthalmia neonatorum, 92. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on Oct. 29th was 3414, which included: Scarlet fever, 918; diphtheria, 1237 (diphtheria carriers, 17); measles, 93; whooping-cough, 267; puerperal fever, 14 mothers (plus 12 babies); encephalitis lethargica, 282; poliomyelitis, 14. At St. Margaret's Hospital there were 19 babies (plus 8 mothers) with ophthalmia neonatorum.

Deaths.—In 124 great towns, including London, there was no death from small-pox, 2 (1) from enteric fever, 6 (0) from measles, 2 (0) from scarlet fever, 8 (0) from whooping-cough, 33 (6) from diphtheria, 54 (9) from diarrhœa and enteritis under two years, and 32 (9) from influenza. The figures in parentheses are those for London itself.

Twickenham reported the only death from enteric fever outside London. Liverpool and Manchester each had 2 fatal cases of measles; Liverpool 2 of whooping-cough. Diphtheria was fatal in 25 great towns, Liverpool, Sheffield, and Leicester each reporting 2 deaths. Liverpool had 10 deaths from diarrhœa, Middlesbrough 5, Birmingham 4.

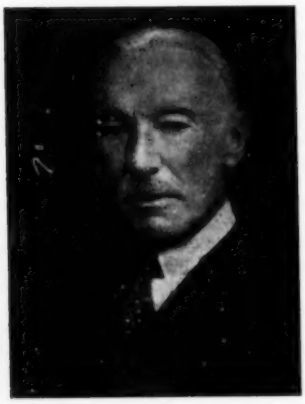
The number of stillbirths notified during the week was 248 (corresponding to a rate of 40 per 1000 total births), including 30 in London.

[1] Rothera, A. C. H., *J. Physiol.* 1908, **37**, 491.
[2] Hurtley, W. H., *Lancet*, 1913, **1**, 1160.
[3] Embden, G., and Schliep, L., *Zbl. Stoffw. Verdauungskrankh. N.F.* 1907, **2**, 250 and 289.
[4] Folin, O., *J. biol. Chem.* 1907, **3**, 177.

OBITUARY

FREDERICK WILLIAM BURTON-FANNING, M.D. Camb., F.R.C.P. Lond.

THE death of Dr. F. W. Burton-Fanning on Oct. 23rd will be mourned by a wide circle. Born at Chertsey in 1863, he was educated at Winchester, St. John's College, Cambridge, and University College Hospital, London, where after qualifying in 1885 with the gold medal in medicine he served as house physician and obstetric assistant. He was then for three years resident at Addenbrooke's Hospital, Cambridge. In 1891 he was appointed physician to the Norfolk and Norwich Hospital and when the Fletcher convalescent home was opened at Cromer five years later he soon discovered how well the patients with pulmonary tuberculosis responded on the balconies there in the Norfolk climate. Physicians generally still thought then that consumptives would die if they slept with their windows open. About this time with his cousin, the late Dr. W. J. Fanning, he devised the now well-known revolving shelter. Mundesley Sanatorium was built by him in 1899, the first specially designed sanatorium to be opened in England. But he regarded it as his greatest personal triumph when he was able to open, in 1903, the Kelling Sanatorium for Workers, eight miles from Cromer, where the less fortunate could obtain efficient treatment. During the war he served in France as medical officer in command of the 55th General Hospital, taking with him an artificial pneumothorax apparatus which was used for sufferers from gunshot wounds of the chest, in collaboration with his friends, John Rose Bradford and Michael Foster.



DR. BURTON-FANNING

[*Photograph by Vandyk*

Though Burton-Fanning's name was associated fairly early in his career with chest complaints—it was in 1905 that his popular handbook on The Open-Air Treatment of Pulmonary Tuberculosis first appeared—his skill extended to general medicine. He soon established a great reputation as a diagnostician and built up a consulting practice beyond, often far beyond, the county of Norfolk. Throughout his life one of his outstanding characteristics was his keenness to render help to those who sought his advice, irrespective of their position in society; and the older he grew the more he exercised himself in trying to help the under-dog. He read widely, published important articles in the medical press, and was always keeping himself abreast of advances in medicine. His unvarying courtesy, his painstaking thoroughness, his skill and common sense, as well as his knowledge of the world and kindness of heart contributed to win the esteem and affection of those with whom he came in contact. He appreciated the psychogenic factors producing ill health; many of his patients improved quickly by unburdening themselves to him and sometimes they came to look upon him not only as a physical healer but as a spiritual adviser as well. His perspicacity is manifest in an article "Neurasthenia in soldiers" contributed to our columns in 1917. After his formal retirement from hospital practice at 65 he continued to be consulted there about chest complaints, and up to 2½ months before his death he worked regularly as a director of the Norwich Union Insurance Society. Amongst other appointments he held, besides those already mentioned, were those of consulting physician to the Children's Sanatorium at Holt, and to the cottage hospitals at Wells, Swaffham, and Cromer, and he was a member of several committees of the Norfolk county council dealing with health subjects.

Dr. Burton-Fanning married in 1893 a daughter of the late W. Cooper-Brown, who with a son and daughter survive him. He lost his two eldest children during the war: a son in the marines in France, and a daughter, who was acting as a nurse, from burns at Cambridge.

MAJORIE BLANDY, M.B., M.R.C.P. Lond.

Majorie Blandy (Mrs. J. Purdon Martin) died at her home at Hampstead on Oct. 26th, to the sorrow of her many friends and the heavy loss of the medical women of London. The younger daughter of the late Richard Blandy of Madeira, she was educated at Newnham College, Cambridge, and the London (R.F.H.) School of Medicine for Women, qualifying in 1914. After serving in France and at the Military Hospital, Endell-street, she held resident posts at the Royal Free Hospital and the Hospital for Sick Children, Great Ormond-street, and at the National Hospital, Queen-square, where she was R.M.O. and then medical registrar. Here she gained the wide experience of nervous disease that led her to specialise in neurology. She was admitted M.R.C.P. Lond. in 1922, and was soon afterwards appointed to the staff of the Bermondsey Medical Mission Hospital and the Elizabeth Garrett Anderson Hospital, where she was senior physician at the time of her death. One of her major interests was infant welfare, and her early training in the diseases of children made her a valuable medical officer to the clinics of the Hampstead Committee of Social Welfare.

In her professional work Dr. Blandy was, as in everything else, unusual. Her knowledge was orthodox but her approach to her cases was individual, unconventional, with an immense regard for the human factor. Her bedside manner was her natural manner, sparing of words almost to bluntness, humorous, shrewd, infinitely kind. She was emphatic that she was no psychiatrist, but her clinics were crowded with patients for whom five minutes talk with Dr. Blandy made the difference between health and despair. She had their confidence and somehow she kept them going. As a diagnostician she was outstanding, and she put her gift most generously at the disposal of her colleagues.

A colleague writes: "Friends of her youth remember Majorie Blandy as a lovely vivid creature, witty, with an acute sense of the comic, and a gaiety easily sobered by pity. She was successful without effort and careless of success; rich in friendships and indifferent to popularity; hospitable yet solitary in spirit. Always one felt in her something

incalculable, an unending capacity to surprise and delight. With her happy marriage to Dr. J. Purdon Martin the centre of her life changed, and she gave herself up with passion to the ordering of her home and the upbringing of her two sons. Her professional work absorbed no less of her energy than before, but nevertheless she contrived to give to her children untiring companionship and thought. For the last four years of her life she faced the deepening shadow of disease with high courage, working until a few weeks ago with apparently undiminished vigour. Her diverse experience and original mind made her a rare companion whose loss will cast a shadow over the lives of her friends."

CLAUDE WILSON, M.D. Edin., F.R.C.P. Lond.

Dr. Claude Wilson, who died on Oct. 31st at Tunbridge Wells, had been in practice there for fifty years and his loss will be keenly felt by a wide circle of patients and by fellow practitioners with whom he worked in harmony. Born at Liverpool in 1860, son of Charles Wilson, sometime hon. treasurer of Liverpool Royal Infirmary, Claude Wilson was educated at a private school in Somerset and later at Owens College, Manchester, taking the medical course at Edinburgh University where he qualified with honours in 1884. Before he left he had been assistant to the professors of clinical medicine and pathology and resident at the Royal Infirmary, laying a foundation for the scientific outlook which he was to exemplify in practice. After taking his M.D. Edin. in 1887 he settled in Tunbridge Wells where he built up a large practice with a bias towards cardiology. Having studied Schott's methods at Nauheim he was one of the first to rescue the victims of rheumatic carditis from the life of invalidism to which they were then consigned; and his opportunities were enhanced when appointed consulting cardiologist to the Kent and Sussex Hospital, to the staff of which he had long been attached. His success was well deserved for, as a lifelong colleague writes, no man could have had a greater sympathy for the pains and ills of humanity, and his attention to those who suffered was unremitting, whatever the cost to himself. It owed nothing to a good bedside manner, for there was no unreality in his make-up and he never paid a visit except when it was needed. He disliked any sort of emotional display and his obvious sincerity appealed especially to the young who could detect the affection through a rather serious exterior. Dr. Wilson had many recreations including music, tennis, and golf, but he will be remembered as a notable mountaineer who became president of the Alpine Club, 1929–31. He married in 1886 Annette, eldest daughter of the Rev. D. Guthrie, D.D., of Liberton, Midlothian, and she survives him with one daughter.

PARLIAMENTARY INTELLIGENCE

DEBATE ON THE ADDRESS

IN the House of Commons on Oct. 27th in the debate on the Address, Mr. A. GREENWOOD criticised the King's speech for making no reference to the distressed areas, or to malnutrition.

Sir KINGSLEY WOOD, Minister of Health, said that there were visible signs of great improvement in the distressed areas on which the Government were committed to spend some £18 million. Proceeding to defence of his own department, he said that no country since the war had done more to deal with the problem of housing than our own country. Since the armistice more than 3,350,000 houses had been completed in this country. For the first eight months of this year there were some 58,000 approvals in local authority housebuilding, as against some 46,000 in 1936. Over 70,000 houses were under construction at the end of September. As regarded slum clearance the five years' programme had more than kept its promise. Already some 650,000 slum dwellers had gone to better homes. With regard to overcrowding, practically all the local authorities had fixed their appointed days when the provisions were to operate; but in many areas the fixing of the appointed day had not postponed the abatement of overcrowding. He would point out to hon. Members who would like to see the statutory definition of overcrowding improved that the obvious first duty must be to achieve the elimination of overcrowding as at present laid down by Parliament. He was not satisfied with the progress which was being made so far as rural housing was concerned. He would propose to Parliament to give Exchequer assistance towards the general provision of cottages for agricultural workers to be let at low rents. He was more than ever convinced that if agricultural workers were to be kept on the land considerable improvements must be made, including the raising of the standard of housing accommodation. (Cheers.) He would sooner renovate a cottage, if it could be turned into a good healthy home, than pull it down. (Cheers.)

In the quarter ended June last, the number of applications for grants under the Housing (Rural Workers) Act were one-third more than for the previous highest quarter ending in December last. Up to date they had received altogether applications for 12,000 dwellings and the total number of dwellings in respect of which grants or loans had been promised since the Act came into operation was now over 15,000. No one could say that that figure was satisfactory and a good deal more had to be done.

In reference to nutrition he pointed out that it had only been under the present Government that the nutrition problem had been seriously considered. The Government's policy on nutrition and public health was ahead of that of any other country. On receiving the report of the Advisory Committee attached to the Ministry of Health on this matter, he had made suggestions to local authorities about the supply of milk and other foodstuffs which were being seriously considered, and progress was being made. Already 47 local authorities had improved their income scales; 62 authorities had already increased the amount of milk-supplies per case, and a number of them had extended the period of supply of milk for expectant mothers and a number had arranged for the pasteurisation of milk. As to maternal mortality schemes under the new Midwives Act were now in operation over the greater part of England and Wales, and he expected that the whole of this new service would be in operation next January. Provision was being made for the employment of about 2700 midwives by the local authorities and some 4850 midwives by the voluntary organisations.

In reply to a question from Viscountess ASTOR about the 14 per cent. of the maternal mortality attributed to attempted abortion,

Sir KINGSLEY WOOD said that a committee was now sitting, under the chairmanship of Mr. Norman Birkett and would, he hoped, report at a very early date, and he would consider the conclusions reached and the recommendations.

In connexion with the new midwifery service, he was glad that, incidentally, the remuneration and status of the midwifery profession had been considerably improved. The House would share the hope that it might be possible to do the same sort of thing for the nursing profession, and he was just about to

set up a committee of a similar kind to examine into the conditions of recruiting and service in that great profession. This was not only of importance to hospitals and institutions of that kind, but also to millions of people in their own homes.

Sir F. ACLAND, dealing with the question of milk, said that the very minimum which the House would accept was a scheme to provide milk for all nursing and expectant mothers, children below school age, and wherever possible the extension of the milk in schools scheme to Saturdays and Sundays.

Mr. ELLIS SMITH raised the question of the treatment of ex-Service men, pleading that an investigation should be conducted by a select committee of the House of Commons into the position of these, and more particularly into the bureaucratic policy pursued by the Minister of Pensions. He had had complaints from medical men in Newcastle claiming that they had done all that was humanly possible to get justice for a man whose spine was badly affected, but that they had failed in spite of all their efforts. Mr. Ellis Smith cited another case in which radiograms showing shrapnel in the leg of a man unable to follow his employment; a letter from the Ministry of Pensions about this case said that the presence of foreign bodies did not necessarily mean that material disablement was resulting therefrom and that the question of the payment of disablement pension did not depend upon whether foreign bodies are or are not retained. He asked for an immediate investigation into the policy of the Ministry of Pensions.

Mr. ERSKINE HILL hoped that when the Government outlined their plans he hoped they would see that the protection against air raids was adequate in every locality. Every hospital should be protected against the risk of incendiary bombs as was the extension recently built to the Hospital for Sick Children, Great Ormond-street.

Sir FRANCIS FREMANTLE drew attention to the reference in the speech from the Throne to questions of health and housing. It was a pity that the inference was drawn from stories of cases of distress that it was necessary to legislate, instead of simply administering more closely the powers that already existed with regard to pensioners. Medical opinion tended naturally to be in favour of the patient. His own view was that the specialists attached to the Ministry of Pensions were an extraordinarily able set of men skilled in making the decision many years afterwards to what extent one could trace an illness or a lesion to an injury suffered 20 years before, or to what extent it had been aggravated by that injury. He was quite certain that there was no idea in the minds of the medical officers of the Ministry of trying to bolster up any financial or economic requirements of the Government by any recommendation.

Referring to housing, Sir Francis hoped that a definite line of action, which must mean legislation this session, would be taken on the subject of rural housing. The work of the Central Housing Advisory Committee should be extended. One of its subcommittees had already investigated and reported on vermin infestation and had inquired into the type and the efficient furnishing of the new houses. The provision of some houses with four bedrooms for big families was most desirable, for the country would not make headway with a declining birth-rate. If other countries reduced their population there might be something to be said for reducing ours, but Sir Francis did not believe that a unilateral depopulation would lead to prosperity. He believed that with an improved economic position for the working classes, people would again go in for large families, and would require houses of a size to accommodate them. The Government deserved the great credit for initiating a campaign for national fitness, but it should not be forgotten that personal effort had got to be at the bottom of making individuals and nations healthy.

Dr. HADEN GUEST said many people in this country had never had enough milk, fruit, vegetables, eggs, or other food and in consequence they did not grow properly. The best way perhaps to enable them to purchase their requirements would be to raise everybody's wages, but in the meantime prices could be reduced, especially of milk. In Scandinavia and in Germany milk could be obtained at threepence a quart. Something like a million head would have to be added to the dairy cows in England and Wales if the supply of milk was to be increased to the amount required, according to the standard of experts on nutrition. If children had the amount of milk which they ought to have daily there would be an enormous diminution in sickness.

Mr. H. RAMSBOTHAM, Minister of Pensions, replying to the request for an investigation into the treatment of ex-Service men, said that the report of the investigation being undertaken by the British Legion would probably be published next year and would be carefully considered before action was taken. He deprecated the remarks made by Mr. Ellis Smith. Rheumatism and weak heart were the diseases specially concerned in the case about which complaint was made and unfortunately these diseases were common in civil life and could not be attributed altogether to war service. The problem was becoming increasingly acute as the men concerned became older. When doubt arose he had the cases referred to an independent medical specialist outside the Ministry altogether, a man appointed from a panel chosen by the president of one of the Royal Colleges and what the specialist said went as far as he (the Minister) was concerned.

Mr. STEPHEN expressed disappointment that the Minister of Pensions was not willing to set up a committee of inquiry, and gave examples of cases where independent medical evidence had been set aside by the Ministry.

Replying to the debate, Mr. ELLIOT, Secretary of State for Scotland, said he hoped soon to introduce a Bill relating to rural housing in Scotland. It would not be possible to include water-supply, but he had not lost sight of the pledges given in that matter.

Sir S. HOARE, Home Secretary, gave figures in support of his contention that the present position of the workers generally showed a substantial improvement as compared with the period preceding the depression of 1930 to 1932.

Referring to the Government's programme of air-raid precautions he said that he had never found a more baffling problem of defence. There was the question on what sort of scale they should make their plans; what should be the exact relations between the central government and the local authorities; and what were the risks against which they were trying to protect the country. It would be a great mistake to dash into these questions without very careful consideration, but he would soon be able to introduce a Bill for allocating duties connected with air-raid precautions, and generally coördinating the various activities that had to be mobilised in this new field of defence. He believed that it would be possible to prevent panics taking place in great centres of population and to ensure that the essential services, upon which a highly developed civilisation depended, should not be brought to an end. He also hoped at no distant date to be able to introduce proposals for dealing with young delinquents.

NEW BILLS

In the House of Commons on Oct. 27th Sir KINGSLEY WOOD, Minister of Health, presented a Bill to amend the National Health Insurance Act, 1936, so as to make certain persons under the age of 16 eligible for medical benefit, to facilitate the provision of medical benefit to such persons and to other young persons; and also a Bill to lower from 50 years to 40 years the age which blind persons must have attained in order to be entitled to old age pensions under the Old Age Pensions Act, 1936; and to amend the law with respect to the provision of assistance in relation to such persons by local authorities.

On Oct. 28th Sir KINGSLEY presented the Population (Statistics) Bill. The measure, which is

also supported by Mr. Elliot, Secretary of State for Scotland, provides for supplementary inquiries upon birth, &c., registration which are additional to the particulars required for entry in the register. The additional information will be given in strict confidence for statistical purposes only, and not entered in the register. It will primarily relate to the ages of the parents, the duration of their marriage, and the number of their children.

QUESTION TIME

THURSDAY, OCT. 28TH

Unemployment Assistance

Mr. JAMES GRIFFITHS asked the Minister of Labour the number of cases in which a reduction of the unemployment allowance had been made by the Unemployment Assistance Board in the past three months; what was the weekly amount of such reductions; and whether, in view of the hardships caused by such reductions at a time when the cost of living was rapidly rising, he would make representations to the Board with a view to the restoration of the cuts and the prevention of any cuts in the future.—Mr. ERNEST BROWN replied: The number of applicants for assistance at the end of June receiving allowances which had been reduced by way of adjustment of the standstill arrangements, otherwise than on account of personal earnings, was approximately 6000. The corresponding figure at the end of September was approximately 18,000. The great majority of the total adjustments made since the beginning of the year are of less than 5*s*. As regards the last part of the question I would refer to the replies which I gave on this subject on Oct. 21st.

Non-inflammable Films

Mr. ROBERT MORRISON asked the Home Secretary whether he had any statement to make on the use of so-called non-inflammable films; and what was the present position.—Sir SAMUEL HOARE replied: I intend to refer this question to the new Advisory Committee on the Cinematograph Act, 1909, the constitution of which will, I hope, soon be completed.

Magistrates and Factory Acts Decisions

Mr. ROBERT MORRISON asked the Home Secretary whether his attention had been called to recent comments made by the Lord Chief Justice, supported by Mr. Justice du Parcq and Mr. Justice Atkinson, on the frequent mistakes made by benches of lay magistrates when dealing with cases under the Factory Acts; and whether he proposed to take any action.—Sir SAMUEL HOARE replied: Yes, Sir. I am aware that the Divisional Court has, on more than one occasion recently, commented on the mistakes which have been made by magistrates as to the meaning and application of the provisions of the Factory Act relating to the fencing of machinery. These comments have received wide publicity and the new Factories Act should assist in clarifying the law on the subject. In the circumstances, I do not think any action on my part is called for; but if difficulties continue to arise I will consider whether I can help magistrates by arranging for a note of the legal decisions to be prepared and circulated.

Housing Subsidies

Sir FRANCIS FREMANTLE asked the Minister of Health whether he was in a position to make any statement in regard to Exchequer grants for housing.

Mr. DE LA BÈRE asked the Minister of Health whether, owing to the low rents which the agricultural workers were in a position to pay, the Government would consider increasing the amount under the Housing Act, 1936, Section 108, Exchequer contribution, in order to decrease the overcrowding which had taken place in rural districts.—Sir KINGSLEY WOOD replied: Yes, Sir. I hope to introduce in the near future a Bill dealing with the grants for slum clearance and overcrowding. The Bill will carry out my promise that contributions at the present rates shall be payable for houses completed between March 31st and Dec. 31st, 1938, and will make new provision for grants for this purpose. I am at present in consultation with the associations of local authorities as to the form and amount of these grants. I propose also to include in the Bill provision to give effect to a recommendation recently made to me by the Central Housing Advisory Committee that Exchequer assistance should be made available towards the erection of houses for the agricultural population.

Birching of Boys

Mr. MCGOVERN asked the Secretary of State for Scotland if his attention had been drawn to the recent sentences in Airdrie sheriff court where three boys, one of whom was only nine years of age, were sentenced to be birched; and if he would take steps to abolish this growing form of punishment.—Mr. ELLIOT replied: The answer to the first part of the question is in the affirmative. The sentence of birching was not carried out in the case of the boy of nine years of age in view of the certificate of the police surgeon. With regard to the second part, the whole question of corporal punishment is at present under investigation by a committee which was appointed in May last by the Home Secretary and myself.

MONDAY, NOV. 1ST

Medical Aid for China

Mr. ELLIS SMITH asked the Secretary of State for Foreign Affairs what attitude was adopted by the representative of the Government towards the proposal that the League of Nations should provide anti-epidemic and medical aid to the civilian population of China; and what was the policy of the Government towards the suggestion for the opening of a League voluntary fund for the purpose of providing the Chinese civilian population with anti-epidemic and medical aid.—Mr. EDEN replied: At the meeting of the Council of the League of Nations held on Oct. 1st, the representative of H.M. Government in the United Kingdom agreed that the League's Health Committee should be asked to prepare a plan to advise and assist the Government of China in dealing with this problem. He further agreed that not only should the existing fund for technical collaboration with China at once be made available for the purpose, but that the Assembly should be invited to augment their annual grant under this category in order to meet the present special situation. Resolutions to the above effect were adopted by the Council and Assembly of the League respectively. H.M. Government expressed general sympathy with the suggestion to open a voluntary fund but reserved their position as regards Government contributions thereto.

Relief Scales and the Cost of Living

Mr. THORNE asked the Minister of Health how many public assistance committees had decided to increase the relief scales because the cost of living had risen, and by what percentage.—Mr. BERNAYS, Parliamentary Secretary to the Ministry of Health, replied: Public assistance authorities are not required to report to my right hon. friend any scales they may adopt as standards to guide them in the administration of relief, but he is aware of 6 public assistance authorities who have recently decided to increase their guiding scale. The increases vary from 5 to 15 per cent.

TUESDAY, NOV. 2ND

Nursing Profession Inquiry

Mr. LEONARD asked the Secretary of State for Scotland whether any woman with nursing qualifications had been appointed to the committee of inquiry into the recruitment for and conditions obtaining in the nursing profession; and whether inquiries through the usual channels took place as to the composition of the committee prior to its appointment.—Mr. ELLIOT replied: Two members of the committee—Miss Smaill, the Superintendent of Nurses at Edinburgh Royal Infirmary, and Miss Whyte, the Matron of Robroyston Hospital, Glasgow—have nursing qualifications. With regard to the second part of the question, I decided to invite the members of the Scottish Committee, which inquired into the training and registration of nurses in 1935, to extend the scope of their investigations to cover questions of recruitment and conditions of service. The only new member of the committee is Lord Alness, who has agreed to act as chairman in place of Sir Archibald Black, now Sheriff of Lanarkshire and unable, on account of the duties of his office, to undertake this further work.

MEDICAL NEWS

University of Cambridge

On Oct. 30th the following degrees were conferred :—

M.D.—J. D. Simpson and J. Glyn Jones.

M.B., B.Chir.—F. M. Crawshaw, R. S. Stevens, R. F. Tredgold, R. A. Andrews, A. T. Westlake, A. V. Mackenzie, G. C. D. Roberts, Norman Whittaker, T. M. Banham, H. G. Dowler, I. C. A. D. Paul, and *G. R. Hawkes.

M.B.—R. V. F. Mercer, G. C. Tooth, C. M. Barker, T. F. Fox, J. C. Marklove, A. W. Abramson, J. R. J. Winter, R. T. Gabb, Frank Stansfield, and *E. M. Darmady.

*By proxy.

University of London

Sir Ernest Graham-Little, M.P., has been re-elected chairman of the council for external students.

Three lectures on the artificial transmutation of matter will be given at King's College, Strand, by Prof. James Chadwick, F.R.S., who holds the Lyon Jones chair of physics in the University of Liverpool, on Dec. 2nd, 7th, and 8th, at 5.30 P.M. Admission without ticket.

Society of Apothecaries of London

At recent examinations the following candidates were successful :—

Surgery.—E. R. Brown, Leeds ; K. J. Higham, Durh. ; D. C. Light, Guy's Hosp. ; G. Macbain, Sheffield ; and J. F. Mason, London Hosp.

Medicine.—J. B. Alexander, Westminster Hosp. ; A. W. Box, Camb. and Guy's Hosp. ; E. R. Brown, Leeds ; O. I. Green, Guy's Hosp. ; J. W. P. Morgan, St. Mary's Hosp. ; G. S. Parker, Manch. ; H. A. N. Passmore, Charing Cross Hosp. ; A. W. B. Perren, Sheffield ; W. A. Royds, Manch. ; F. Schwartz, Charing Cross Hosp. ; and W. E. Young, Guy's Hosp.

Forensic Medicine.—J. B. Alexander, Westminster Hosp. ; A. W. Box, Camb. and Guy's Hosp. ; E. R. Brown, Leeds ; O. I. Green, Guy's Hosp. ; I. M. Iddali, Manch. ; J. W. P. Morgan, St. Mary's Hosp. ; G. S. Parker, Manch. ; H. A. N. Passmore, Charing Cross Hosp. ; A. W. B. Perren, Sheffield ; W. A. Royds, Manch. ; F. Schwartz, Charing Cross Hosp. ; and W. E. Young, Guy's Hosp.

Midwifery.—F. B. Akeroyd, Camb. and Leeds ; V. M. Attenborough, Roy. Free Hosp. ; A. Dunkerley, Manch. ; O. H. Galloway, Royal Colleges, Edin. ; G. Howell, Welsh National School of Medicine ; J. S. Lancaster, Camb. and St. George's Hosp. ; and J. C. B. Nesfield, Camb. and St. Mary's Hosp.

The following candidates, having completed the final examination, are granted the diploma of the society entitling them to practise medicine, surgery, and midwifery : J. B. Alexander, A. W. Box, E. R. Brown, O. I. Green, K. J. Higham, G. Howell, J. F. Mason, J. W. P. Morgan, G. S. Parker, A. W. B. Perren, W. A. Royds, and W. E. Young.

Royal College of Physicians of London

At a comitia of the college held on Oct. 28th, with Lord Dawson, the president, in the chair, Prof. F. S. Langmead, Dr. A. M. H. Gray, Prof. L. G. Parsons, and Prof. G. S. Wilson were elected councillors. Sir Raymond Crawfurd was re-elected representative of the college on the committee of management of the Conjoint Board, and Sir Comyns Berkeley representative on the Central Midwives Board. It was announced that Dr. Donald Stewart had been appointed Milroy lecturer for 1939, and that the Jenks memorial scholarship had been awarded to Robert John Evans, late of Epsom College.

The following candidates were admitted to the membership of the college :—

El Sayed Mohammed Taha Abdel Bar, M.D. Cairo, Joseph Warwick Bigger, M.D. Dubl., Norman Vogelsang Birrell, M.B. Glasg., Kenneth Oscar Black, M.B. Camb., Thomas Harold Boon, M.B. Durh., John Frederick Bromley, M.B. Manch., Eric George Lapthorne Bywaters, M.B. Lond., Eli Davis, M.D. Manch., Gervais Joly Dixon, M.B. Dubl., Frank Abercrombie Elliott, M.B. Cape Town, Badio Girgis Hanna, M.B. Cairo, Benjamin Gottlieb, M.D. Durh., Ronald Stanley Illingworth, M.D. Leeds, Hildebrand Hamilton Jacob, M.B. Cape Town, Eric Charles Oliphant Jewesbury, M.B. Oxon, Nowshir Jungalwalla, M.B. Rangoon, Sorab Barjor Karani, M.B. Bombay, Alan Kekwick, M.B. Camb., Thomas Wigram Lloyd, M.B. Oxon, Vincent Edwards Lloyd-Hart, L.R.C.P. Lond., Edna Florence Mackenzie, M.B. Sydney, Ian Macpherson, M.B. Leeds, Basil Oswald Quin, M.B.N.Z., Walter Frederic Richards, M.B. Camb., Robert Donald Teare, L.R.C.P. Lond., Charles Mathurin Vaillant, M.B. Oxon., Eric Roads Van Langenberg, L.R.C.P. Lond., and Isabel Grace Hood Wilson, M.D. Edin.

Licences to practise were conferred upon 129 candidates (118 men and 11 women) who have passed the final examination of the Conjoint Board and have complied with the by-laws of the college. The following are the names and medical schools of the successful candidates :—

Enid I. M. Addenbrooke, Birm. ; I. Affleck, Charing Cross ; D. N. Annan, Camb. and St. Bart.'s ; J. R. Ascott, St. Thos. ; H. F. S. Beadles, Camb. and Univ. Coll. ; G. Behr, St. Bart.'s ; J. M. Bellamy, Camb. and St. Thos. ; C. Berens, Manch. ; K. G. Bergin, Camb. and Brist. ; S. M. Bieber, Liverp. ; B. R. Billimoria, St. Bart.'s ; A. K. Borland, Guy's ; Phyllis E. M. Bowen, Cardiff ; Margaret C. Bowie, Roy. Free ; R. I. C. Bradford, Camb. and Birm. ; F. M. Braines, St. Bart.'s ; E. B. Brennan, Camb. and St. Bart.'s ; L. Bressloff, Westminster ; J. D. Buckner, Guy's ; J. F. H. Bulman, Camb. and St. Thos. ; M. M. A. Cader, King's Coll. ; C. J. Carey, St. Bart.'s ; Dorothy R. Clarke, Roy. Free ; H. Coates, St. Bart.'s ; A. H. R. Coombes, Camb. and Lond. ; A. E. Cooper and H. P. F. Corbin, St. Mary's ; F. C. Courtice, Sydney and Lond. ; G. A. Craig, Belfast ; O. J. Curl, Camb. and St. Bart.'s ; P. A. Currie, Westminster ; S. David, Andhra and Lond. ; D. B. H. Dawson, Manch. ; J. K. Denham, Camb. and St. Thos. ; R. L. J. S. Derham, Brist. ; W. D. Doey, Camb. and Lond. ; J. M. M. Drew, Sydney and St. Thos. ; Eva M. Drown, Roy. Free ; S. S. Ershadi, St. Bart.'s ; D. I. Evans and C. D. Farris, Guy's ; G. Flavell, Otago and St. Bart.'s ; Anne C. Fletcher, West Lond. ; H. A. Freeman, Liverp. ; W. K. Frewen, St. Bart.'s ; J. B. Frumin, L.M.S.S.A. ; A. Garces, Camb. and St. Thos. ; L. E. Gardiner, St. Bart.'s ; V. P. Geoghegan, Leeds ; A. H. Grant, St. Bart.'s ; A. C. F. Green, Camb. and St. Bart.'s ; J. L. Griffith, Camb. and St. Thos. ; B. F. B. Gulliver, Univ. Coll. ; F. E. D. Hallon, St. Mary's ; L. A. T. Hamilton, St. Bart.'s ; N. Hamlin, Univ. Coll. ; S. D. Hankey, Guy's ; A. Hargreaves, Manch. ; C. A. Hayes, Middx. ; C. S. Hemming, Lond. ; J. Hoadley, St. Bart.'s ; E. H. B. Hopkins, Univ. Coll. ; J. N. H. Howell, Middx. ; N. C. Howse, Melb. and St. Bart.'s ; R. M. Hugo, Oxon and Middx. ; A. H. Jack, St. Bart.'s ; E. S. James, Manitoba and West Lond. ; D. N. John, St. Mary's ; R. T. Johnson, Camb. and St. Bart.'s ; E. E. Jones, Univ. Coll. ; Olwen B. Jones, Roy. Free ; D. Kay, Manch. ; V. N. Krishna Iyer, Madras and West Lond. ; D. Landsborough, Lond. ; A. Leese, Camb. and Leeds ; J. W. Lillico, Camb. and St. Thos. ; S. Mackenzie, Camb. and Lond. ; R. W. Mason, Camb. and Middx. ; E. Moore, Leeds ; G. S. Moore, Charing Cross ; Mary C. Mott, King's Coll. ; F. D. Mowat, Brist. ; K. S. Mullard, Camb. and St. Thos. ; N. B. Mundy, St. Bart.'s ; A. L. Myburgh, Cape and Guy's ; S. K. Nag, Calcutta and St. Bart.'s ; A. P. Norman, Camb. and Middx. ; G. B. Northcroft, Camb. and Lond. ; J. R. Oliver, Camb. and Guy's ; T. L. Oliver, Camb. and Lond. ; Gwendoline D. Orlebar, Durh. ; M. K. Parikh, Bombay and Univ. Coll. ; J. Patterson, Guy's ; G. R. C. Peatfield, Camb. and Lond. ; P. A. T. Phibbs, Camb. and St. Thos. ; I. B. Pirie, Oxon and Middx. ; S. F. Polley, King's Coll. ; F. Ramsay, St. Bart.'s ; C. W. R. Rayne-Davis Oxon and Middx. ; D. F. Rees, St. Thos. ; E. G. Reynolds and G. A. Richards, St. Bart.'s ; J. E. C. Robinson, Charing Cross ; T. G. Robinson, Guy's ; W. A. H. Rushton, Camb. and Univ. Coll. ; W. E. A. Sampson, Charing Cross ; L. J. Segal, Durh. ; H. Sharp, Leeds ; G. Sheers, Camb. and St. Thos. ; H. G. Singer, Otago and St. Bart.'s ; I. Singh, Rangoon and Guy's ; J. A. Smart, St. Thos. ; K. C. P. Smith, Brist. ; D. Specter, Cardiff ; A. M. Spencer, Cardiff and Brist. ; D. J. P. Spillane, Lond. ; T. H. Steele-Perkins, Camb. and Guy's ; R. Stevenson, Camb. and St. Thos. ; Cecil M. M. Stewart, King's Coll. ; F. J. R. Stoneham, Guy's ; W. S. Sutton, Liverp. ; L. P. Symons, Guy's ; Mabel W. N. Tribe, Brist. ; J. W. B. Waring, St. Bart.'s ; R. M. Williams, King's Coll. ; R. M. Wiltshire, Middx. ; M. C. Woodhouse, Camb. and St. Thos. ; R. Woolstencroft, Westminster ; and J. D. Younghusband, Camb. and St. Thos.

Diplomas in anæsthetics and child health were conferred on the candidates named in our report of the meeting of the Royal College of Surgeons of England (Oct. 23rd, p. 997). Diplomas in public health were also conferred jointly with the Royal College of Surgeons as follows :—

T. D. Ahmad, Julia C. H. Avery, Ilma B. S. Bingemann, G. E. Breen, C. A. McPherson, B. M. Rao, M. Sendak, J. H. Shakespeare, Muriel H. Steven, and A. C. Stevenson.

Scottish Conjoint Board

At recent examinations of the Royal Colleges of Physicians and Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow, the following candidates were successful :—

L.R.C.P., L.R.C.S., and L.R.F.P. & S.—A. J. Alexander, H. K. B. Armstrong, L. V. Arundel, A. C. Beckett, J. M. A. Blell, H. M. S. Boardman, J. A. Bolster, John Boyd, W. G. Carson, Walter Chundun, D. L. Cooke, J. R. Connelly, Basil Cota, Marcel Daniels, A. A. G. Deverell, C. L. Eidam, Otto Einstein, Reuben Figman, Ludwig Frank, W. W. Frank, H. W. Goldblatt, Hans Goldmann, G. B. Gordon, J. T. H. Graham, David Gray, R. E. Gunning, J. G. Hahn, R. C. J. Hill, G. O. Horne, Daniel Hyman, E. M. Langer, A. L. Langley, E. A. Lawrence, John Macrae, D. D. Maitland, Yahia Marzouk, J. S. Mehlman, Ethel M. Miller, Daniel Mound, I. R. McNeish, Ureana E. Orr, J. W. A. Parsons, D. S. Prichard, J. W. Reid, E. D. Riner, A. L. Robertshaw, A. L. Rosenthal, Ibrahim Sadek, Gerhart Schoenewald, R. F. Setlogelo, B. H. Shulman, C. W. Siegel, Ernst Sklarz, Charles Spiegel, Sol Wachtel, E. R. Winkler, John Winning, Harry Yonace, and Irving Zuckerberg.

University of Edinburgh

At a graduation ceremony held on Oct. 23rd the degree of M.B., Ch.B. was conferred on Eileen E. Ross.

University of Aberdeen

Dr. Douglas R. MacCalman, general secretary of the Child Guidance Council and psychiatrist to the London Child Guidance Clinic, has been appointed lecturer in psychopathology in the university. The lectureship, which will be known by the name of Crombie-Ross, was founded through an anonymous benefaction, and one of its conditions is that the lecturer shall treat cases of mental ailments—as distinct from established mental disease—at the Royal Infirmary. The local authorities will give a grant towards a clinic to be set up by the university at Forresterhill, and will send patients to Dr. MacCalman there.

Royal Faculty of Physicians and Surgeons of Glasgow

At the annual meeting of the faculty on Nov. 1st the following were elected office-bearers for the coming year: president, Dr. John Henderson; visitor, Dr. J. Souttar McKendrick; hon. treasurer, Dr. James H. MacDonald; hon. librarian, Dr. W. R. Snodgrass; representative to the General Medical Council, Mr. G. H. Edington; other councillors, Mr. J. Douglas Brownlie, Dr. Carstairs C. Douglas, Mr. A. G. Faulds, Mr. John Gracie, Mr. A. J. Hutton, Dr. H. L. G. Leask, Mr. William J. Richard, Mr. John Rowan, and Mr. Archibald Young.

National University of Ireland

Travelling studentships in pathology have been awarded to Dr. P. C. Bresnihan, in physiology to Dr. Oliver Fitz-Gerald, and in anatomy to Dr. Patrick FitzGerald.

Prof. H. F. Moore has been appointed representative of the University on the Medical Research Council, Saorstat Eireann, for four years.

British College of Obstetricians and Gynæcologists

At the meeting of the council held on Oct. 22nd, with Sir Ewen Maclean, the president, in the chair, Dr. George Gray Ward of New York was admitted to the honorary fellowship, and the following were admitted to the membership:—

Eric Bailache, S. C. Bose, Marjorie R. E. Boyd, F. J. Burke, Hugh Callagher, Isabella Cameron, *Jagadispada Dutt, P. J. Ganner, *Edith Ghosh, H. F. P. Grafton, C. J. K. Hamilton, M. R. W. Hart, John Howkins, *Mary John, J. G. H. Ince, J. W. Johnstone, *Mary P. Lukose, *Anna P. Martin, Laetitia L. C. de Menezies, *D. N. Mitra, *Olive Monahan, *Una F. M. Morton, *B. D. Mukherjee, *H. E. Murray, *A. N. Palit, *N. A. Purandare, *Akhilanath Sarkar, *Manindranath Sarkar, G. A. Simpson, *B. H. Singh, A. B. Stenhouse, *Padmanur Venkatagiri, Margaret Venters, and R. J. Wotherspoon.

* In absentia.

Dr. T. F. Corkill of Wellington, New Zealand, was appointed a member of the New Zealand reference committee.

The following candidates have been awarded the diploma of the College after examination:—

James Baxter, T. A. Best, Beatrice A. Blake, Eleanor D. Blunt, S. G. Brook, W. J. Candlish, R. G. Cooke, L. H. Copping, J. C. Cuthbert, C. S. France, T. N. Hart, J. A. J. Hammond, Adrian Hill, H. B. Jennings, A. N. Jones, Godu Limaye, Ibrahim Magdi, G. B. Marsden, H. G. Page, J. S. Price, J. R. Ritchie, J. M. Ross, Mohamed Salleh, K. W. Stroude, J. R. Taylor, Dorothy C. R. Vethavarnam, S. D. Vora, and J. M. Watt.

Nervous Disorder and Industry

On Oct. 27th the Duke of Kent presided over a meeting in London at which industrialists were asked for help in extending the Tavistock Clinic (Malet-place, London, W.C.1). Sir Farquhar Buzzard said that statistics showed that 1 in 14 of the working population suffered from nervous disorders to the extent of needing treatment, and the loss to employers from this cause amounted to 10,000,000 weeks' work each year. Lord Hollenden, hon. treasurer of the clinic, stated that the cost of providing accommodation for an adequate medical school, hospital, and out-patient department would be £300,000, plus an assured £20,000 annual income. To raise this sum, he suggested that employers throughout the country should give one shilling per employee and pay an annual subscription at the rate of one penny per employee.

Harveian Society of London

The Buckston Browne prize for 1937 has been awarded to Mr. R. T. Payne, M.S., of St. Bartholomew's Hospital, for his essay on phlebitis.

British Institute of Philosophy

Lord Samuel will give his presidential address on civilisation to this institute on Tuesday, Nov. 16th, at 8.15, at University College, Gower-street, London, W.C. Cards of admission may be obtained from the director of studies at University Hall, 14, Gordon-square, W.C.1.

International Society of Surgery

The eleventh congress of this society will be held in Vienna from Sept. 19th to 22nd next year under the presidency of Prof. R. Matas of New Orleans. The subjects selected for discussion are the surgical treatment of hypertension, bone-grafting, and the surgical treatment of cysts and tumours of the lung. The general secretary of the society is Dr. L. Mayer, 72, rue de la Loi, Brussels, Prof. Grey Turner (British Postgraduate Medical School, Ducane-road, London, W.12), and Prof. Lambert Rogers (Surgical Unit, Royal Infirmary, Cardiff) are the British representatives on the international committee.

Florence Stoney Prize

A Florence Stoney prize of £25 will be awarded to a present student of the London (Royal Free Hospital) School of Medicine for Women, or a past student of not more than ten years' standing for an essay or published paper on one of the following subjects: the treatment of cancer by methods primarily not surgical; laboratory work associated with the influence of radiations (X ray, radium, ultra-violet light) on neoplasms; the treatment of hyperthyroidism by methods primarily not surgical. The essays should be sent to the warden and secretary at the medical school not later than May 1st.

Rheumatism in Relation to Death and Disablement

On Monday last Lord Horder addressed the Insurance Institute of London on the aims of the Empire Rheumatism Council, which, he said, has already organised the scientific and administrative resources of the home country and of the Dominions for a relentless war. It was very probable that the incidence of rheumatic disease had risen of recent years; for the expectation of life had been extended and the strains of life had greatly increased. More and more people were subjected to the bombardment of the din of the factory and of the city, and to long periods of travel; the meals of thousands were hurried and defective (either in quantity or in quality or in both); a proper amount of physical exercise became more and more difficult for large masses of the people to obtain; and industry imposed on many a constant routine of small and frequently repeated movements which called for the over-use of a few muscles and the neglect of the rest. These were the predisposing, and, at times, even the determining, causes of rheumatic disorders, and the extent of rheumatic morbidity was now serious not because of the mere presence of pain and stiffness but because of the incapacity of rheumatic persons to carry on their work. In 1922 the Ministry of Health had investigated a sample of 90,000 persons coming under National Health Insurance, and concluded that rheumatic disease was probably responsible for 16 per cent. of the total of industrial morbidity in England and Wales, and that in the course of a year about 372,600 insured persons sought medical advice because of it. This took no account of the sufferers outside the insured class. Moreover, though rheumatism, in the narrow sense, was not often directly lethal, a Ministry of Health report for 1924 stated that "organic disease of the heart is for the most part rheumatic in origin" and that "organic heart disease is the cause of over one-third of all deaths in England and Wales."

The Empire Rheumatism Council, which may be addressed at 1, Mitre Court Buildings, Temple, London, E.C.4, proposes coördinated research into the causative factors, and concurrently into the treatment, of all the various diseases coming within the rheumatic group, and Lord Horder concluded his address by referring to the "propriety" of approved societies supporting its work financially.

Royal College of Physicians and Surgeons of Canada

Dr. George S. Young of Toronto has been elected president of the College.

Lectures on Tropical Hygiene

A course of lectures on tropical hygiene for men and women outside the medical profession proceeding to the tropics will be given by Dr. H. B. Newham and Prof. R. T. Leiper, F.R.S., and Mr. H. H. Clay at the London School of Hygiene and Tropical Medicine, Keppel-street, W.C., from Nov. 29th to Dec. 10th, at 4 P.M. Further information may be had from the secretary of the school.

Memorial to Sir Robert Jones

At the annual medical service at Liverpool Cathedral on Oct. 17th Lord Derby unveiled a memorial to Sir Robert Jones. The memorial, which marks the resting place of his ashes in the wall of the cathedral, is a low-relief showing a surgeon operating on a crippled child. In the background are some of the instruments which Sir Robert Jones designed. It is the work of Mr. E. Carter Preston.

Green Cross Society

Lord Horder will be the chief speaker at a "luncheon for nature lovers" which will be held by this society at the Criterion Restaurant, Piccadilly Circus, on Wednesday, Nov. 17th. Lord Dufferin and Mr. Frank Salisbury, R.A., wil also speak and the subject will be Our Green and Pleasant Land. Further information may be had from the secretary of the society, 47, Victoria-street, London, S.W.

Further Help for Orthopædic Treatment

Lord Nuffield has given a further £150,000 to trustees for the development of an organised plan of specialised orthopædic treatment throughout the country. In 1935 he gave £86,500 for this purpose which has been administered through the Central Council for the Care of Cripples. Of the new gift he has allocated £70,000 to Scotland and £26,000 to Northern Ireland.

Psychiatric Clinic at Guy's Hospital

Guy's Hospital has received a gift of £43,000 from "five friends" for the provision of a psychiatric clinic. The new building will be erected within the grounds of the hospital and will provide 42 beds for patients of moderate means in addition to the six beds which are already assigned to the department of psychological medicine in the general wards. The clinic will contain divisions for major as well as for minor mental disorders, for psychotic as well as for psychoneurotic conditions. In addition to the sectional accommodation there will be a laboratory, an occupations room, a reading-room, dining-room, lounge, gymnasium, games room, roof garden and solarium. In the division for more acute illness there will be provision for special forms of treatment, including continuous baths. It is intended to have a full-time clinical staff of four doctors whose duties will combine both treatment and research. They, and the laboratory staff, will have access to the laboratories of other departments of the hospital and medical school, in which a large new pathology block is in course of construction. It is intended that the clinical and research staff shall engage in treatment, teaching, and instruction in the clinic and in the rest of the hospital. Students at the hospital will take part as clinical clerks in the individual care of the patients and will have ready access to lectures and demonstrations given in the clinic and the hospital by the clinic staff.

While the clinic will be under the general direction of the physician for psychological medicine to the hospital, it will be available for the treatment of patients under the care of any doctor of consultant standing in psychological medicine in coöperation with the full-time staff, and it is thought that patients are likely to come for treatment earlier and more willingly to a clinic which is a department of a general hospital. The special beds in the general wards will continue to be available for the poorest patients; but it will be necessary at first, pending the accumulation of funds for endowment, to make a charge for clinic patients ranging from three and a half guineas a week upwards. Building is to be begun shortly, and the clinic should be open for patients early in 1939.

Children's Convalescent Home

The Duchess of Kent on Oct. 27th opened the Children's Rest of the Friends of the Poor at Twickenham. Children between the ages of two and five will be received and the work begun 40 years ago at Roehampton by Mrs. Grey will be carried on here.

London School of Hygiene and Tropical Medicine

The trustees of a fund raised to commemorate the late Sir William Simpson have, through Mrs. Alec-Tweedie, offered this school a fund for the establishment of a prize. The offer has been accepted and a Simpson prize of books will be awarded annually to the student obtaining the highest marks at Part I of the January examination for the diploma in tropical medicine and hygiene.

Fellowship of Medicine and Post-Graduate Medical Association

Courses have been arranged during November and December as follows: dermatology St. John's Hospital (afternoons, Nov. 1st to 30th); medicine, surgery, and gynæcology, Royal Waterloo Hospital (all-day, Nov. 8th to 20th); proctology, St. Mark's Hospital (all-day, Nov. 8th to 13th); thoracic surgery, Brompton Hospital (all-day, Dec. 6th to 11th); and dermatology, Hospital for Diseases of the Skin, Blackfriars (afternoons, Dec. 6th to 18th). Week-end courses will be given in surgery at the Princess Beatrice Hospital (Nov. 20th and 21st); and in chest diseases at the Brompton Hospital (Nov. 27th and 28th). Courses especially suitable for M.R.C.P. candidates will be held in neurology at the West End Hospital for Nervous Diseases (afternoons, Dec. 6th to 18th); in chest diseases at the Brompton Hospital (5 P.M., twice weekly, Nov. 22nd to Dec. 17th); in heart and lung diseases at the Victoria Park Hospital (Wednesdays and Fridays, 6 P.M., Nov. 24th to Dec. 17th); and there will be a clinical and pathological course at the National Temperance Hospital (Tuesdays and Thursdays, 8 P.M., Nov. 16th to Dec. 2nd). Application for admittance to these courses must be made to the secretary of the Fellowship of Medicine, 1, Wimpole-street, London, W.1. The courses are open only to members and associates.

Leprosy in Great Britain To-day

In a Chadwick lecture given in London on Nov. 2nd Dr. J. M. H. MacLeod said that in most of the cases of leprosy now in this country the disease was contracted abroad, but he had reported three in which it was contracted in this country by prolonged contact with infected persons. It was impossible to estimate the exact number of cases in Great Britain and such numbers as 75 or 100 which were usually given were simply guess-work. Cases were liable to be concealed both by the patients themselves and their relatives; they were not always recognised by doctors; and the disease had not been made notifiable. When it ceased to be endemic here the remaining cases came to be regarded as negligible; but in view of the serious nature of the disease and the possible danger of unrecognised cases in an active phase infecting children it was surprising that the health authorities should persist in this ostrich-like policy. As a rule lepers hid themselves in their own homes tended by their relatives, and apt to be neglected by them when they became helpless. Lodging-houses and hotels naturally refused to accommodate them, the general hospitals were averse from admitting them, and the last resort was the county council hospital of their district, where they were unwelcome guests. When cases became mental the difficulties of finding a home for them were further increased. Though there was no embargo to the admission of lepers into this country, there were endless difficulties in arranging their return to the colony whence they came. At the present time lepers could travel freely in public conveyances, could sit with their neighbours in places of entertainment, and might even live with their families in close association with young children unless the medical officer of health became cognisant of their existence and somehow managed to provide suitable accommodation for them. In 1913 a few philanthropic people had founded the Home of St. Giles for British Lepers, and though at present it could house only 12 cases it could be extended when funds permitted.

Appointments

BOLAND, C. R., M.D. Belf., F.R.C.S. Irel., Senior Assistant Medical Officer (Grade I) at the Mile End Hospital (L.C.C.).
CLARKE, L. P., M.R.C.S. Eng., D.P.H., Assistant in the Pathological Department of the Hospital for Consumption and Diseases of the Chest, Brompton.
CROWE, C. L. C., M.D. Aberd., Resident Medical Superintendent of the Nottingham City Hospital and Medical Officer of the City Institution.
DOWN, C. E., L.D.S., Hon. Dental Surgeon to King George Hospital, Ilford.
JONES, T. B., M.R.C.S. Eng., D.P.M., First Assistant Medical Officer at Caterham Hospital (L.C.C.).
LOUDEN, MARGARET M. C., M.B. Lond., Surgical Registrar at the South London Hospital for Women.
MACLEOD, CAMERON, F.R.C.S. Eng., Surgeon to Out-patients at the Hampstead General and North-West London Hospital.
MITCHELL, J. S., M.B. Camb., Resident Medical Officer at the Christie Hospital and Holt Radium Institute, Manchester.
NODINE, A. M., M.R.C.S. Eng., L.D.S., Consulting Dental Surgeon to King George Hospital, Ilford.
PEARSON, R. S. B., D.M. Oxon., M.R.C.P. Lond., Physician to Out-patients at the Hampstead General and North-West London Hospital.
RICH, LOUIS, M.B. Manch., Second Assistant Medical Officer at the Out-patient Department, Royal Manchester Children's Hospital.
STRANG, NATHAN, M.B. Glasg., Deputy Medical Superintendent at the South Shields General Hospital.
TAYLOR, HERMON, M.D., M.Chir. Camb., F.R.C.S. Eng., Assistant Surgeon to the Queen's Hospital for Children, Hackney.
WEIR, J. H., M.D. Durh., B.Hy., D.P.H., Deputy Medical Officer of Health for Ilford.

David Lewis Northern Hospital.—The following appointments are announced:—
HUNTER, W. R., M.B., Surgical Registrar and Tutor;
EVANS, F. I., F.R.C.S. Eng., Surgical Registrar and Tutor;
ELLIS, G. R., M.D. Camb., M.R.C.P. Lond., Medical Registrar and Tutor;
TONG, R. P., M.B. Liverp., Medical Registrar and Tutor; and
GARDEN, R. S., M.Ch.(Orth.) Aberd., Orthopædic Registrar.

Certifying Surgeons under the Factory and Workshop Acts: Dr. D. R. MITCHELL (Newquay District, Cornwall); and Dr. J. H. VERWEY (Brynmawr District, Brecon).

Vacancies

For further information refer to the advertisement columns

Ayr, Seafield Maternity Hosp.—H.P., at rate of £200.
Barking Borough.—Asst. M.O., £500.
Barnsley, Beckett Hosp. and Dispensary.—Cas. O. and H.P., £250 and £200 respectively.
Bedford County Hosp.—Third H.S., at rate of £150.
Benenden, Kent, National Sanatorium.—Res. Asst. M.O., £350. Also H.P., at rate of £150.
Blackburn Royal Infirmary.—Res. H.P., £175.
Blackpool, Victoria Hosp.—Pathologist, £600.
Bolingbroke Hosp., Wandsworth Common, S.W.—Cas. O., at rate of £120.
Brentwood, Essex County Mental Hosp.—Jun. Asst. M.O., £510.
Bristol, Winford Orthopædic and Heart Hosp.—M.O., £325.
Cambridge, Addenbrooke's Hosp.—Res. Anæsthetist and Emergency O., at rate of £130.
Cardiff, King Edward VII Welsh National Memorial Assn. Area.—Asst. Tuber. O., £500.
Chesterfield and North Derbyshire Royal Hosp.—H.S., at rate of £150.
Croydon General Hosp.—H.P., £125.
Cumberland County Council.—Consultant in Gynæcology and Obstet., £450.
Dewsbury, Staincliffe County Hosp.—Deputy Med. Supt., £350.
Ealing, King Edward Memorial Hosp.—Cons. Orthopædic Surgeon.
Evelina Hosp. for Sick Children, Southwark, S.E.—H.S., at rate of £120.
Farringdon General Dispensary, 17, Bartletts Building, E.C.—Part-time M.O.
Hampstead General and North-West London Hosp., Haverstock Hill, N.W.—Cas. Surg. O. for Out-patient Dept., at rate of £100.
Harrow U.D.C.—Asst. M.O.H., £600.
Hastings Royal East Sussex Hosp.—Three Hon. Anæsthetists.
Hospital for Sick Children, Great Ormond-street, W.C.—Res. Anæsthetic Reg., at rate of £150. Also Res. H.S., at rate of £100.
Hospital for Women, Soho-square, W.—Pathologist and Registrar, £100.
Hull City Hosp. for Infectious Diseases, Cottingham.—Res. M.O., £350.
Ilford Isolation Hosp.—Res. M.O., £600.
Ilford, King George Hosp.—Two Clin. Assts. to Anæsthetic Dept.
Indian Medical Service.—Officers.
Infants Hosp, Vincent-square, Westminster.—Hon. Clin. Assts. Also H.P., at rate of £100.
Inverness, Royal Northern Infirmary.—Med. Consultant and Hon. Charge-Physician, £1200.
Kent County.—Asst. County M.O.H., £700.
Leeds, Menston Mental Hosp.—Sen. Asst. M.O., £650.
Leeds, St. Mary's Infirmary, Armley.—Res. M.O., £250.
London County Council.—Asst. M.O.'s, Grade I, each £350. Also Asst. M.O.'s, Grade II, each £250.
London Jewish Hosp., Stepney Green, E.—Res. H.S. and Res. Cas. O., each at rate of £100.
Louth Public Health Hosp.—Med. Supt., £800.
Manchester, Ancoats Hosp.—Asst. Pathologist, £350.
Manchester, Monsall Hosp. for Infectious Diseases.—Second Res. Asst. M.O., £350.
Margate, Royal Sea-Bathing Hosp.—H.S., at rate of £200.
Middlesbrough Education Committee.—Asst. School M.O., £500.
Middlesex Hosp. and Medical School, W.—Med. and Surg. Registrarship, each £300.
Mildmay Mission Hosp., Austin-street, Bethnal Green.—Asst. Cas. O., at rate of £125.
Miller General Hosp., Greenwich-road, S.E.—Res. Surg. O. and Reg., £250. Also H.P. and H.S., each at rate of £100.
National Hosp. for Diseases of the Heart, Westmoreland-street, W. Hon. Physician to Out-patients.
Northumberland County Council.—Maternity and Child Welfare Officer and Chief Supervisor of Midwives £750. Also Temp. Asst. M.O., £500.
Nottingham General Hosp.—Res. Cas. O., at rate of £150.
Plymouth, Prince of Wales's Hosp., Devonport.—Sen. H.S., at rate of £130.
Plymouth, Prince of Wales's Hosp., Greenbank-road.—Res. Surg. O., at rate of £225.
Portsmouth, St. James' Hosp. for Nervous and Mental Diseases.—Locum Tenens Asst. M.O., 7 guineas a week.
Preston, Wrightington Hosp., Appley Bridge.—Jun. Asst. M.O., £250.
Queen's Hosp. for Children, Hackney-road, E.—H.P., H.S., and Cas. O., each at rate of £100.
Rotherham Hosp.—Sen. H.S., £200.
Royal Air Force Dental Branch.—Commissions.
Royal Chest Hosp., City-road, E.C.—Res. M.O., at rate of £150.
Royal Naval Medical Service.—Medical Officers.
Royal Northern Hosp., Holloway, N.—H.S., at rate of £70.
St. Mary's Hosp., Institute of Pathology, &c., Paddington, W.—Research Studentship.
Sheffield Royal Hosp.—Clin. Asst. to Ophth. Dept., £300.
Sheffield Royal Infirmary.—H.S. to Ear, Nose, and Throat Dept. and Ophth. H.S., at rate of £80 and £120 respectively.
Sleaford, Lincs, Rauceby Mental Hosp.—Asst. M.O. £350.
Smethwick, St. Chad's Hosp.—Res. Obstet. Officer, £350.
South London Hosp. for Women, Clapham Common, S.W.—Clin. Asst.
South Shields County Borough.—Asst. M.O., £500.
Stafford, Standon Hall Orthopædic Hosp.—H.S., £200.
Swanley, Hosp. Convalescent Home, Parkwood.—Res. M.O., at rate of £200.
Sydney Hosp.—Pathologist to Kanematsu Memorial Institute of Pathology, £900.
West London Hosp., Hammersmith-road, W.—Neurologist.
Winchester, Royal Hampshire County Hosp.—H.S., at rate of £125.
Wolverhampton Royal Hosp.—Res. Anæsthetist, at rate of £200.
Woolwich and District War Memorial Hosp., Shooters Hill, S.E.—H.P. and H.S., each at rate of £100.

The Chief Inspector of Factories announces a vacancy for a Certifying Factory Surgeon at Newcastle (Northumberland).

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
TUESDAY, Nov. 9th.
Therapeutics and Pharmacology. 5.45 P.M. Dr. E. P. Poulton and Dr. W. L. Watt: Treatment of Exophthalmic Goitre by Deep X Ray Therapy (demonstration of cases at 5 P.M.).
Psychiatry. 8.30 P.M. Dr. D. N. Parfitt: Neurological and Psychological Effects of Hypoglycæmia.
FRIDAY.
Clinical. 5.30 P.M. (Cases at 4.30 P.M.) Dr. F. Parkes Weber and Dr. A. Schlüter: 1–2. Chronic Œdema of Legs with High Blood Pressure. Mr. Philip Turner: 3. Diverticulitis, Sixteen Years after Operation. Dr. Richard Ellis and Mr. David Levi: 4. Tuberculous Epididymitis in a Boy of Nine. Mr. Preskeil (for Mr. Levi): 5. Ununited Epiphyses in a Man of Forty-five. Dr. N. M. Jacoby: 6. Pick's Disease. Dr. Andrew Morland: 7. Congenital Bronchiectasis treated by Pneumonectomy. Dr. Ernest Fletcher: 8. Spondylitis of von Bechterew. Mr. J. E. H. Roberts: 9–10. Total Pneumonectomy.
Ophthalmology. 8.30 P.M. (Cases at 8 P.M.) Mr. S. T. Parker: Plasmocytoma of the Lacrymal Gland. Mr. Arnold Sorsby: British Ophthalmology in the Sixteenth and Seventeenth Centuries.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, W.
MONDAY, Nov. 8th.—8.30 P.M., Sir Joseph Barcroft, F.R.S., Lord Burghley, M.P., Dr. Adolphe Abrahams, and Mr. A. E. Porritt: National Physical Training.

HARVEIAN SOCIETY OF LONDON.
THURSDAY, Nov. 11th.—8.30 P.M. (University College Hospital), Sir Thomas Lewis will show the Harvey Film.

MEDICAL SOCIETY OF INDIVIDUAL PSYCHOLOGY.
THURSDAY, Nov. 11th.—8.30 P.M. (11, Chandos-street, W.), Dr. Cuthbert Dukes: Organ Inferiority.

PADDINGTON MEDICAL SOCIETY.
TUESDAY, Nov. 9th.—9 P.M. (Tuberculosis Dispensary, 20, Talbot-road, W.), Dr. A. E. Carver: Chronic Alcoholism. (Non-members invited.)

WEST KENT MEDICO-CHIRURGICAL SOCIETY, Miller General Hospital, S.E.
FRIDAY, Nov. 12th.—8.45 P.M., Mr. J. M. Wyatt: The Value of Endocrines in Disturbances of the Female Genital Organs.

SOUTH-WEST LONDON MEDICAL SOCIETY, Bolingbroke Hospital, Wandsworth Common.
WEDNESDAY, Nov. 10th.—9 P.M., Prof. J. Paterson Ross: Before and After Operations on the Bile Passages.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY, Royal Northern Hospital, N.
FRIDAY, Nov. 12th.—9.15 P.M., clinical evening.

BIOCHEMICAL SOCIETY.
FRIDAY, Nov. 12th.—3 P.M. (London Hospital, E.), Communications and demonstrations.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

UNIVERSITY OF LONDON.
TUESDAY, Nov. 9th.—5.30 P.M. (Middlesex Hospital), Prof. I. Snapper: Human Pseudotuberculosis. (First of three lectures.)

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.
TUESDAY, Nov. 9th, and THURSDAY.—5 P.M., Dr. Harold Scott: Conquest of Disease in the Tropics. (Fitz-Patrick lectures.)

TAVISTOCK CLINIC, Malet-place, W.C.
THURSDAY, Nov. 11th.—8.30 P.M., Dr. J. L. Livingstone: Respiratory Neuroses.

BRITISH POSTGRADUATE MEDICAL SCHOOL, Ducane-road, W.
TUESDAY, Nov. 9th.—4.30 P.M., Sir Arthur Hall: Meningitis and Encephalitis.
WEDNESDAY.—Noon, Prof. I. Snapper (Amsterdam): Diseases of the Bone. 2 P.M., Prof. Dible: Peptic Ulcer and Gastric Carcinoma. 3 P.M., clinical and pathological conference (surgical). 4.30 P.M., Mr. A. Bradford Hill, D.Sc.: Planning and Interpretation of Experiments in Medicine.
THURSDAY.—2.15 P.M., Dr. Duncan White: Radiological Demonstration. 3.30 P.M., Prof. F. J. Browne: Hæmorrhage of Late Pregnancy.
FRIDAY.—2 P.M., clinical and pathological conference (obstetrics and gynæcology). 2.30 P.M., Mr. V. Zachary Cope: Actinomycosis.
Daily, 10 A.M. to 4 P.M., medical clinics, surgical clinics and operations, obstetrical and gynæcological clinics and operations.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith, W.
MONDAY, Nov. 8th.—10 A.M., Dr. Post: X Ray Film Demonstration, skin clinic. 11 A.M., surgical wards. 2 P.M., operations, surgical and gynæcological wards, medical, surgical, and gynæcological clinics. 4.15 P.M., Mr. Green-Armytage: The Preservation of the Fœtus.
TUESDAY.—10 A.M., medical wards. 11 A.M., surgical wards. 2 P.M., operations, medical, surgical, and throat clinics. 4.15 P.M., Mr. Woodd Walker: Abdominal Emergencies—When Not to Operate.
WEDNESDAY.—10 A.M., children's ward and clinic. 11 A.M., medical wards. 2 P.M., gynæcological operations, medical, surgical, and eye clinics. 4.15 P.M., Dr. Redvers Ironside: The Cerebral Complications of Pulmonary Disease.
THURSDAY.—10 A.M., neurological and gynæcological clinics. Noon, fracture clinic. 2 P.M., operations, medical, surgical, genito-urinary, and eye clinics.
FRIDAY.—10 A.M., medical wards, skin clinic. Noon, lecture on treatment. 2 P.M., operations, medical, surgical, and throat clinics. 4.15 P.M.: Mr. Batchelor: lecture on surgical subject.
SATURDAY.—10 A.M., children's and surgical clinics. 11 A.M., medical wards.
The lectures at 4.15 P.M. are open to all medical practitioners without fee.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, Nov. 8th, to SATURDAY, Nov. 13th.—ST. JOHN'S HOSPITAL, 5, Lisle-street, W.C., afternoon course in dermatology (open to non-members).—ROYAL WATERLOO HOSPITAL, Waterloo-road, S.E., all-day course in medicine, surgery, and gynæcology.—ST. MARK'S HOSPITAL, City-road, E.C., all-day course in proctology.—Unless otherwise stated, these courses are open only to members.

LONDON SCHOOL OF DERMATOLOGY, 5, Lisle-street, W.C.
TUESDAY, Nov. 9th.—5 P.M., Dr. H. MacCormac: Malignant Growths of the Skin.
WEDNESDAY.—5 P.M., Dr. I. Muende: Histopathology of Chronic Granulomata.
THURSDAY.—5 P.M., Dr. G. B. Dowling: Seborrhœa and Seborrhœic Dermatitis. (Chesterfield lectures.)

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.
FRIDAY, Nov. 12th.—4 P.M., Mr. W. A. Mill: Diagnosis of Sinusitis.

NATIONAL HOSPITAL, Queen-square, W.C.
MONDAY, Nov. 8th.—3.30 P.M., Dr. Hinds Howell: Increased Intracranial Pressure.
TUESDAY.—3.30 P.M., Dr. J. P. Martin: Affections of the Cranial Nerves.
WEDNESDAY.—3.30 P.M., Dr. F. M. R. Walshe: Clinical Demonstration.
THURSDAY.—3.30 P.M., Dr. Denis Brinton: Convulsions and Fits.
FRIDAY.—3.30 P.M., Dr. Bernard Hart: Psychopathology and the Psychoneuroses.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
THURSDAY, Nov. 11th.—2 P.M., Dr. W. W. Payne: Blood Chemistry in Simple Everyday Laboratory Tests. 3 P.M., Dr. Alan Moncrieff: The Anæmias of Infancy. Out-patient clinic daily at 10 A.M. and ward visits at 2 P.M.

ST. GEORGE'S HOSPITAL, S.W.
THURSDAY, Nov. 11th.—5 P.M., Dr. Anthony Feiling: Neurological Demonstration.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION, St. James' Hospital, Ouseley-road, S.W.
WEDNESDAY, Nov. 10th.—4 P.M., Dr. R. D. Lawrence: The Modern Treatment of Diabetes.

ST. JOHN CLINIC AND INSTITUTE OF PHYSICAL MEDICINE, Ranelagh-road, S.W.
FRIDAY, Nov. 12th.—4.30 P.M., Sir William Willcox: Physical Medicine in the Rheumatic Disease (General Survey).

ST. MARY'S HOSPITALS, Whitworth-street West, Manchester.
TUESDAY, Nov. 9th.—4.15 P.M., Prof. Miles H. Phillips: The Prevention of Puerperal Fever. (Lloyd Roberts lecture.)

ANCOATS HOSPITAL, Manchester.
THURSDAY, Nov. 11th.—4.15 P.M., Mr. Diggle: Ear, Nose, and Throat Cases.

LEEDS GENERAL INFIRMARY.
TUESDAY, Nov. 9th.—3.30 P.M., Demonstration of surgical cases. Mr. L. N. Pyrah: Gastroscopy as an Aid to Diagnosis.

LEEDS PUBLIC DISPENSARY AND HOSPITAL.
WEDNESDAY, Nov. 10th.—4 P.M., Mr. L. N. Pyrah: Gastroscopy as an Aid to Diagnosis (with demonstration).

UNIVERSITY OF SHEFFIELD.
SUNDAY, Nov. 7th, and FRIDAY, Nov. 14th.—Post-graduate Clinics at the Royal Hospital, Royal Infirmary, and Jessop Hospital.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION.
WEDNESDAY, Nov. 10th.—4.15 P.M. (Royal Infirmary), Prof. James Hendry: Traumatic Lesions following Childbirth.

Births, Marriages, and Deaths

BIRTHS

HUMFREY.—On Oct. 26th, the wife of Dr. S. H. G. Humfrey, Northampton—a daughter.

JONES.—To Marian, wife of E. Idris Jones, M.D., M.R.C.P., at King's College Hospital, S.E.5,—a son, on Oct. 22nd.

LONGFORD.—On Oct. 25th, at Devonshire-place, the wife of Dr. W. U. Desmond Longford, of Rainham, Kent—a daughter.

OWEN-FLOOD.—On Oct. 21st, at Welbeck-street, the wife of Dr. J. H. Owen-Flood, Berkhamsted—a daughter.

RADFORD.—On Oct. 24th, at Upper Richmond-road, Richmond, the wife of Dr. W. J. E. Radford—a son.

ROBINSON.—On Oct. 30th, at Slough, the wife of Dr. Allan B. Robinson—a son.

SHAPLAND.—On Oct. 25th, at Stoke Poges, the wife of Dr. R. R. Shapland—a daughter.

MARRIAGES

BANKS—CRADON.—On Oct. 28th, at St. John's Wood Presbyterian Church, John Sutherland Banks, M.B., to Mary Cradon.

FRANKLIN—BALMER.—On Oct. 30th, at St. Columba's Church, Pont-street, John Lewis Franklin, M.D., to Katharine Mary Raeburn Balmer.

NUTTALL—WELCH.—On Oct. 28th, at the Congregational Church, Rhos-on-Sea, Harold Nuttall, M.D., to Violet, only daughter of Stanley Welch, J.P., of Hyde.

DEATHS

COWAN.—On Oct. 21st, at sea, John Archer Cowan, M.B. Lond., D.T.M., Government Pathologist, Singapore, and of Formby, Lancashire.

GUTHRIE.—On Nov. 1st, at Harley-street, London, W., Archibald Cowan Guthrie, M.B. Edin.

MCBRIDE.—On Oct. 28th, at Brighton, Charles Arthur McBride, M.D. Toronto, L.R.C.P. Edin., aged 81.

MAYBURY.—On Oct. 29th, at Southsea, Lysander Maybury, M.D., M.S. R.U.I., in his 83rd year.

PITT.—On Oct. 31st, at Wellesbourne, Warwick, Richard Joseph Pitt, L.R.F.P.S. Glasg., L.S.A.

RECKITT.—On Oct. 29th, at Guy's Hospital, Walter Francis Reckitt, L.S.A., of Carshalton.

WAUGH.—On Oct. 27th, at Broadstairs, Kent, John Waugh, M.D. Edin., in his 82nd year.

WILSON.—On Oct. 31st, at Tunbridge Wells, Claude Wilson, M.D. Edin., F.R.C.P. Lond., in his 77th year.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

THE REYNOLDS PORTRAIT OF JOHN HUNTER

Sir Joshua Reynolds's portrait of John Hunter, in the Royal College of Surgeons of England, is gradually disappearing. This means the loss of a great artist's record of the man who has had perhaps the greatest individual influence on the scientific study of animal physiology and pathology.

The fading of many Reynolds portraits has been attributed to his use of pigments and media in which he was experimentally interested and which time has shown to be unstable. Fortunately in Jackson's copy and in Sharpe's engraving of the picture we have accurate records of the best known of all medical portraits while yet it was fresh and bright. The latter, in its faithfulness, gives a vivid impression that it is Sir Joshua's very portrait in all save its colour. Prints of it have long hung in countless waiting- and consulting-rooms and so have become familiar to generations of patients and their friends.

The picture was painted and exhibited in 1786, when Hunter was 58 years of age. Two years later Sharpe's engraving was published. In 1816, while yet the picture was undimmed, John Jackson, R.A., commissioned by Sir Charles Bell, painted a copy whose colours, unlike those of the original, are still quite fresh. It hangs in room 25 in the National Portrait Gallery in Charing Cross-road, and in it we can see to-day John Hunter as Reynolds saw and painted him, and find a measure of the deterioration that has overtaken Reynolds's picture.

In 1817 the picture was presented to the College. Twenty years later its condition led to an inspection by the conservator of the National Gallery who advised that nothing should be done "for the present." Deterioration progressed. In 1854, at the council's request, Mr. Muller made a copy in oils. This, although not a very happy effort as a portrait, is a record of the colouring of the original as it was at that time. The obvious difference between this copy and Jackson's of 38 years before marks the progress of decay. In 1863, on the advice of Sir Charles Eastlake, the picture was repaired by Mr. Farrer. Of its state at that time Leslie wrote: "In the careless custody of the College of Surgeons the picture appeared . . . irretrievably ruined. . . . Thanks, however, to Mr. H. Farrer the picture . . . now looks as . . . when fresh from the painter's easel." So deep decay and such complete restoration suggest the hasty expression of an ill-considered judgment.

From that time fading has gradually advanced unchecked. The change is greatest below. The surroundings of the figure are so dim as to be undecipherable; the legs are almost indistinguishable, the pendent right hand resembles a shapeless pudding, the pen that it held is gone. The face, the least affected part, has lost its once sharp outline—a change that enhances its absorbed, far-away expression. The colours generally are now dim, dull, drab, and the whole picture is progressing toward extinction.

Of the painting of the picture there is a story that Leslie gives thus. "The story goes that after . . . several ineffectual attempts of securing a pose Hunter, fatigued, fell into a train of thought and Sir Joshua at once fixed him while thus absorbed." Groves and Cronin, not content with quoting this passage, add: "It seems probable that . . . Sir Joshua turned his canvas upside down and recommenced the picture. This is somewhat confirmed by the picture which shows a thick cake of paint in a large patch between the legs, indicating where the first commenced head was painted out." There is no cake of paint, large or small, to be seen between the legs or elsewhere, and as the legs overlap each other, there is no room between them for a head to be painted either out or in. Ottlet tells the tale the other way round: "Reynolds . . . turned the canvas upside down, and made a fresh sketch with the head between the legs of the former figure." Old head and new legs, old legs and new head, make up a pictorial topsy-turvydom in which a silly story fitly ends. The picture is now once again in the cleaner's hands; for how long is still uncertain.

PUBLIC HEALTH RESEARCH IN CALCUTTA

THE All-India Institute of Hygiene and Public Health in Calcutta, apart from its teaching activities, has been engaged during 1936 in research into the reasons for and methods of forecasting cholera epidemics, into the causes of epidemic dropsy and blackwater fever, into the problems of tuberculosis and syphilis in India, and into maternal mortality and malnutrition.[1] Cholera research is made more difficult by the absence of an experimental animal which will reproduce the classical disease and by the impossibility of experimenting upon human beings with an organism as virulent as the cholera vibrio. A discovery that may be of considerable importance was that vibrios which by chemical tests were found to belong to a non-pathogenic group could be changed to a type which resembled a pathogenic group by passing them through flies. This finding suggests that the fly may play a part in causing outbreaks by activating organisms in water-tanks or in carriers. An inquiry into 300 maternal deaths occurring in Calcutta showed that childbearing was directly responsible for 80 per cent. of them, and that of these sepsis accounted for 33 per cent., the toxæmias for 25 per cent., anæmia for 19 per cent., hæmorrhage for 14 per cent., and shock and accidents of labour for 5 per cent. Disproportion and difficult labour are comparatively rare in Calcutta, but in the district in which the institute lies the maternal mortality-rate is 28·6 per 1000 live births; on the other hand, of the 215 mothers who received antenatal care only 1 died. The infant mortality-rate is also high—196 per 1000 live births—but supervision by the institute's clinic and home visitors reduced the figure in their cases to 121 per 1000.

RELATION OF POSTURE TO HEALTH

WHY is posture important, and in what way does it affect health? These are questions difficult to answer in precise terms. As far as women are concerned a thorough and detailed study recently made of 300 girls under the auspices of the Ling Association yields useful data.[2] Four groups of girls between the ages of 18 and 21 were examined: (*a*) students from physical training colleges; (*b*) girls undergoing regular periods of physical training; (*c*) students playing voluntary games, but with no regular physical training; (*d*) factory girls playing hardly any games and living a life of physical inactivity. Each group contained an unselected mixture of types; the only big sections of the community not represented or analysed were the office and shop girls. The controversial opinions held on what signs constitute a "good posture" made it difficult to decide on a standard. Dr. Hoffa refers to many authorities in this connexion, and also analyses the four Brown types, which she uses as a means of classification. Her examination consisted of a complete medical overhaul after taking a full clinical history, and was followed by measurements of limbs, thorax, abdomen, pelvis, and pelvic tilt. A ratio giving the "index of body-build" avoids the fallacies associated with attempts to judge health from weight and height per se, ignoring the type of build. Flexibility, balance, and endurance were also tested. At the end of the report all findings are displayed in graphs: pelvic tilt, vital capacity, type of menstrua-

[1] Annual Report of the All-India Institute of Hygiene and Public Health, Calcutta, 1936. Calcutta: Govt. of India Press. Pp. 48.

[2] Report of Investigations carried out on behalf of the Ling Association of Teachers of Swedish Gymnastics. By Dr. Elisabeth Hoffa. Obtainable from the Ling Association, Hamilton House, Bidborough-street, London, W.C.1, for 2*s.* 6*d.*

tion, measurements, and so forth, in relation to the posture adopted by the four different groups of girls. The results most definitely demonstrate the effect of regular physical activity in assisting good posture, and of good posture in fostering good health. To take one example only, dysmenorrhœa was common in the factory group, which had a low standard of posture, and its incidence varied inversely with the amount of physical activity and resultant pelvic mobility. There are of course many other factors which it was not possible to take into consideration in this report, such as nutrition or working conditions; nor have the sedentary workers on the one hand, and leisured classes, with their opportunities for natural sport and long holidays, on the other, been subjected to comparative analysis. The facts as here recorded are striking, and Dr. Hoffa deserves credit for a painstaking contribution to the cause of healthy physical activity.

AN ADVENTUROUS PRACTITIONER

BORN in the Karoo and of Anglo-Dutch descent, Dr. A. C. Alport received his medical education at Edinburgh and returned to practise his profession in South Africa. Like his father, who at the age of 17 had sailed from London to Vancouver on a windjammer, the *Fusi-Yama*, to seek his fortune, he had an adventurous spirit. He tried several methods of getting rich quickly. Speculation and horse-racing having failed, he tried his hand at gold-mining and, in this, very nearly made a fortune—but not quite. His mature view is that the only way to amass wealth is by the slow and painful one of hard work, thrift, and careful investment. His passion for taking a chance did not, however, distract him from his work, which at the period with which this book deals, was that of a general practitioner; on the contrary, it made him work all the harder at it if only to recoup his losses. All this, and much more, is entertainingly set forth in a book[1] which is packed with stories of medical and extra-medical adventure. The author is no hero to himself; in these pages he reveals his own strengths and weaknesses with perfect frankness and, in contrast to the egoism of some other autobiographers, both medical and non-medical, his humorous self-depreciation is refreshing.

CONSCIOUSNESS AND THE ANÆSTHETIST

THE precise nature of consciousness is a topic that gives the psychologist, the physiologist, and the philosopher plenty to talk about. The anæsthetist is even more directly concerned, for his practice may be influenced by a fuller understanding of what he is really achieving. The intricacy of the problem is readily appreciated when we reflect on dreams, occurring when consciousness as ordinarily understood is in abeyance, and on that ill-defined state of mind, during the induction of anæsthesia and during recovery from it, when actions apparently conscious are performed by a person entirely unaware of them at the time and incapable of recalling them afterwards. Writing on a "biological approach to the study of psychic changes in anæsthesia," Lodholz[2] starts by dividing behaviour into three categories: (1) sentient, the conscious or psychic kind, (2) the biological, and (3) the physiological. The last includes the reactions of the various parts of the organism, such as tissues and organs, and involves various body mechanisms, such as circulation, secretion, and reflexes. "Biological" behaviour includes reactions that are those of the organism as a whole; these are directed towards self-maintenance, self-protection, growth, and race-preservation. Sentient behaviour possesses the distinctive feature of manifesting consciousness; it is a later development in evolution and increases in importance from the lower to the higher forms of animal life. The physiological and biological behaviour with which conscious manifestations appear are biological need, injury, activity of certain physiological effectors, response to environmental conditions, and reproductive drive. The conscious result of biological need is exemplified by hunger, thirst, fatigue, and suffocation. There is a great family of sensory mechanisms in which the conscious phase of response is very active—namely, the surface reacting systems. Pain, however, has comparatively poor evolutional development; stimuli must be strong to reach the physiological threshold and below this level simply produce reflex action. If it were not for this providential arrangement conscious life would be increasingly painful. Anæsthesia, by removing psychophysiological function, which is its dominant effect in the early stages, is capable of providing much information about the biological importance of sentient behaviour in the human being. Those mechanisms that appear late in evolution and become most highly developed are the first to suffer from anæsthetic depression. Anatomically considered, anæsthesia involves the regions of the nervous system that are of recent development before those that are primitive. Two seats of conscious behaviour may be anatomically differentiated, the region of the optic thalamus and the cerebral cortex. The former may be regarded as the main seat of what is termed palæo-consciousness, the latter of neo-consciousness, and Lodholz discusses the distinguishing characteristics of these two forms.

THE MEMOIR OF A CONCILIATOR[1]

Henry T. Hodgkin was born of Quaker parents in 1877, went up to Cambridge in 1895 where he consorted with Leonard Doncaster and took the natural sciences tripos, and qualified with honours from St. Thomas's Hospital in 1902. After holding a resident appointment at the Mildmay Hospital he volunteered for student work in China, believing that missionary effort was particularly needed there. His medical knowledge gave him the intimate contact he desired with Chinese students, and although he gradually gave up medical work, he retained the outlook of the conciliator and was successful in building up an indigenous Christian church. More and more he became the adviser and leader of men of his own age in China, and later in England and America. Dr. Wood's memoir is the story of a singularly wholehearted personality. The author opens with an endorsement of Ian Maclaren's suggestion that if new truth is to win a hearing it should be proclaimed by a physically big man. Hodgkin stood 6 ft. 3 in. and although he did not think better of himself than he should, he had the commanding presence which inspired confidence in others. A brief record of his life appeared in THE LANCET of 1933, **1**, 726; the four years which have elapsed since his death have not dimmed the impression he made on his contemporaries.

SEX INSTRUCTION FOR GIRLS

WE have received a pamphlet on sex instruction for girls[2] which can be read with profit by parents, teachers, and girls approaching adolescence. It is written simply, setting forth the facts of fertilisation, growth of the fœtus, and birth without either sentimentality or undue hedging. A short description of the changes occurring at puberty and some sound advice on sublimation are included. Doctors and nurses should find it a useful publication to recommend to inquirers

[1] The House of Curious. The Odyssey of a Father and Son. By A. Cecil Alport. London: Hutchinson and Co. 1937. Pp. 320. 10*s*. 6*d*.
[2] Lodholz, E. *Anesth. & Analges.* Sept.-Oct. 1937, p. 283.

[1] Henry T. Hodgkin. A Memoir by H. G. Wood, D.D. London: Student Christian Movement Press Ltd. 1937. Pp. 281. 5*s*.
[2] Sex Instruction for Girls. By Dr. Flora Shepherd. London Association of Maternity and Child Welfare Centres. 1937. Pp. 23. 6*d*.